This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.075 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260 *et seq.*

1.	Facility Name and Mailing Address:	Foxcroft School Wastewater Treatment Plant P. O. Box 5555 Middleburg, VA 22117	SIC Code :	4952 WWTP
	Facility Location:	22407 Foxhound Road Middleburg, VA 22117	County:	Loudoun
	Facility Contact Name:	Dale Stotler/Facility Manager	Telephone Number:	540-687-4530
	Facility E-mail Address:	dstotler@foxcroft.org		
	Contact Operator Name:	Steve Cawthron	Telephone Number:	570-338-9710
	Contact Operator E-mail	Scawth1062@aol.com		
2.	Permit No.:	VA0024112	Expiration Date of previous permit:	5/11/15
	Other VPDES Permits associated with this facility:		NA	
	Other Permits associated with this facility:		PWSID #6107100 (Water Supply ID); Two Remediation Sites (Poll Comp. Numbers 20143162, 20133016); Petroleum Discharge (VAG830472, VAG830431)	
	E2/E3/E4 Status:	NA		
3.	Owner Name:	Foxcroft School		
	Owner Contact/Title:	Catherine McGhee/Head of School	Telephone Number:	540-687-5555
	Owner E-mail Address:	Headofschool@foxcroft.org		
4.	Application Complete Date:	September 2, 2014		
	Permit Drafted By:	Joan C. Crowther/Anna Westernik	Date Drafted:	3/25/15
	Draft Permit Reviewed By:	Anna Westernik	Date Reviewed:	4/7/15
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	4/10/15
	Public Comment Period :	Start Date: 5/20/2015	End Date:	6/19/2015

5. Receiving Waters Information: See **Attachment 1** for the Flow Frequency Determination

Receiving Stream Name :	Goose Creek	Stream Code:	1aGOO
Drainage Area at Outfall:	151.63 sq.mi.	River Mile:	25.98
Stream Basin:	Potomac River	Subbasin:	Potomac River
Section:	9	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-A05R
7Q10 Low Flow:	0.13 MGD	7Q10 High Flow:	5.32 MGD
1Q10 Low Flow:	0.00 MGD	1Q10 High Flow:	4.46 MGD
30Q10 Low Flow:	0.1 MGD	30Q10 High Flow:	8.8 MGD
Harmonic Mean Flow:	Not Determined	30Q5 Flow:	0.48 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

X	State Water Control Law	X	EPA Guidelines
X	Clean Water Act	X	Water Quality Standards
X	VPDES Permit Regulation	___	Other
X	EPA NPDES Regulation		

7. Licensed Operator Requirements: Class III

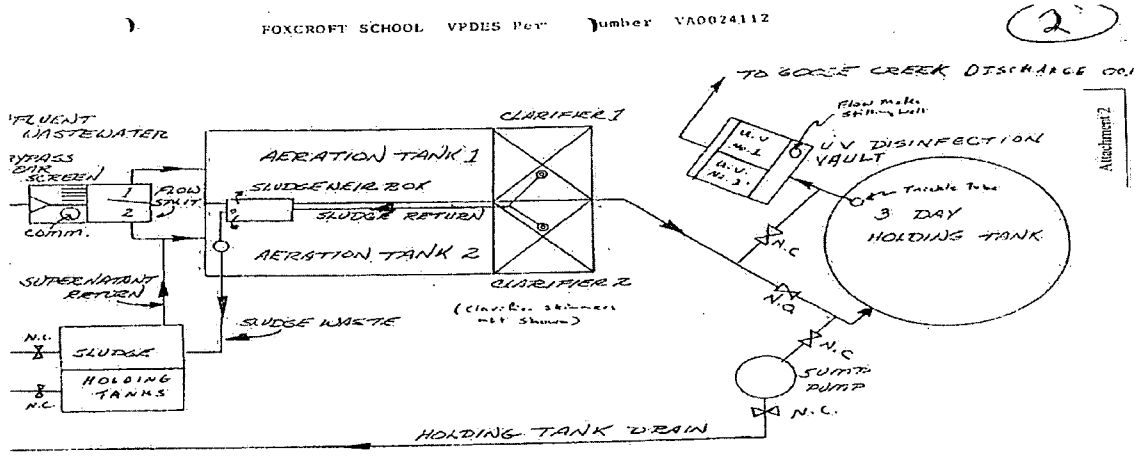
8. Reliability Class: Class II

9. Permit Characterization:

X	Private	X	Effluent Limited	___	Possible Interstate Effect
___	Federal	X	Water Quality Limited	___	Compliance Schedule Required
___	State	___	Whole Effluent Toxicity Program Required	___	Interim Limits in Permit
___	POTW	___	Pretreatment Program Required	___	Interim Limits in Other Document
X	TMDL	___	e-DMR Participant		

10. Wastewater Sources and Treatment Description:

The Foxcroft School Wastewater Treatment Plant consists of a comminutor, back-up bar screen and a splitter box to distribute flow between 2 parallel treatment trains consisting of extended aeration tanks and secondary clarification. The wastewater flow then enters a 225,000 gallon polishing tank with a hold time of approximately 3 days followed by UV disinfection and post aeration.

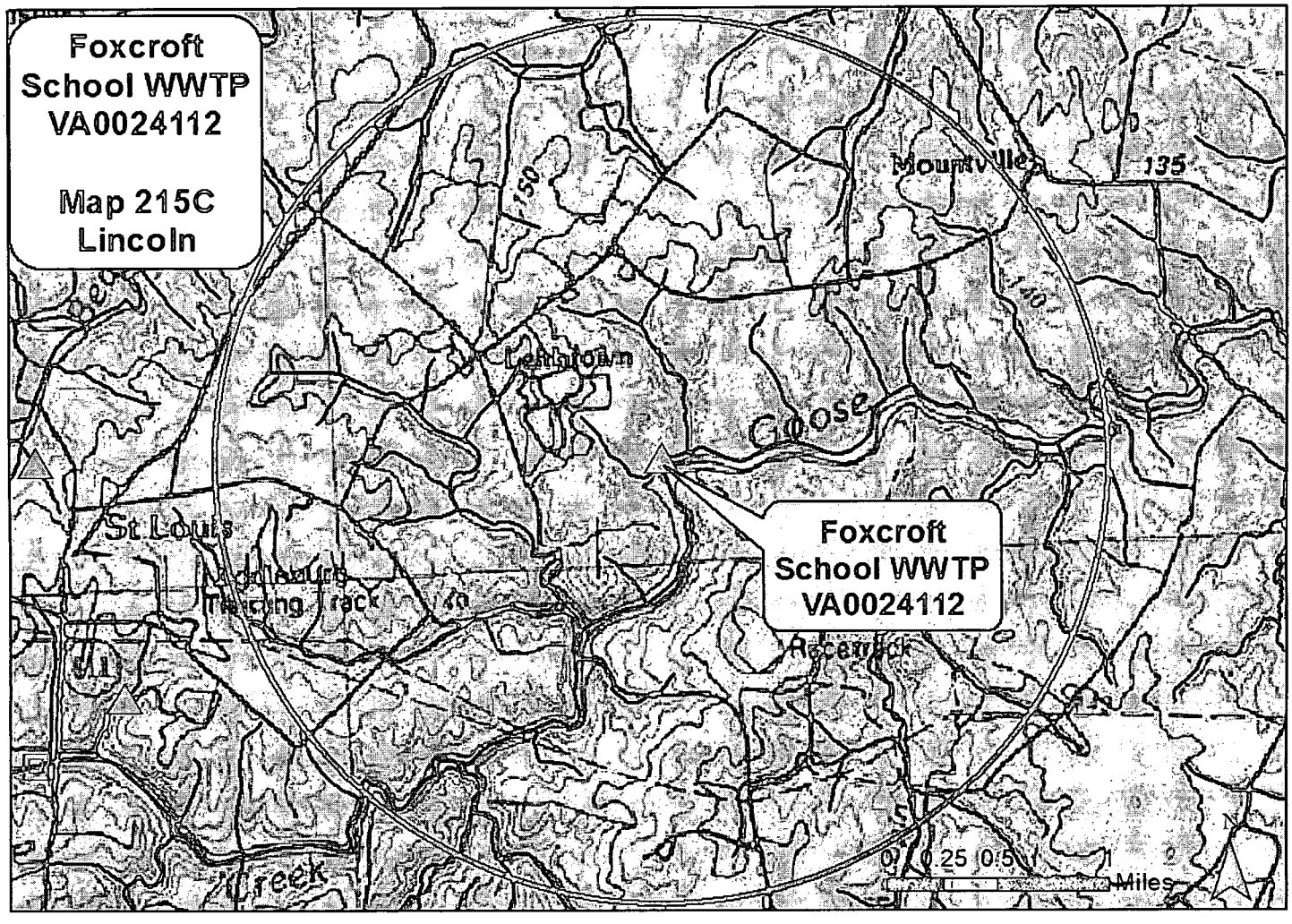


PROCESS FLOW DIAGRAM

JULY, 80
REVISED JAN, '92
REVISED MAR. 1998

TABLE 1 – Outfall Description				
Outfall Number	**Discharge Sources**	**Treatment**	**Design Flow(s)**	**Outfall Latitude and Longitude**
001	Domestic Wastewater	See Item 10 above.	0.075 MGD	39° 00' 21" N 77° 44' 38" W

USGS Topographic Map: Lincoln, DEQ Map # 215C



11. Sludge Treatment and Disposal Methods:

The Foxcroft School Wastewater Treatment Plant has a sludge holding tank of approximately 15,000 gallons, which holds about five months of generated sludge. This tank is not aerated. The tank is pumped quarterly. The sludge is normally hauled to the Loudoun County manhole F-17 located on Route 697 just off of Route 7 in Ashburn, Virginia. Loudoun County Sanitation Authority accepts sludge at this location for ultimate disposal at the Blue Plains Wastewater Treatment Plant in Washington, D.C.

12. Other Discharges in the Receiving Stream Watershed:

TABLE 2 – Discharges in Waterbody VAN-A05R			
Individual Permits			
River Mile	**Type**	**Latitude/Longitude**	**Description**
Jeffries Branch, UT	0.09 MGD Municipal Wastewater Discharge, with an expansion to 0.18 MGD	39° 03' 32" 77° 52' 53"	FEMA WWTP (VA0024759)
Jeffries Branch, UT	Variable Process and Industrial Storm Water Discharge	39° 03' 29.4" 77° 53' 06.0"	FEMA Industrial Outfall 002 (VA0091464)
Jeffries Branch, UT	Variable Process and Industrial Storm Water Discharge	39° 03' 31" 77° 53' 06.0"	FEMA Industrial Outfall 003 (VA0091464)
3.07 Wancopin Creek	0.25 MGD Municipal Wastewater Discharge	38° 52' 23" 77° 43' 36"	Middleburg WWTP (VA0024775)
0.32 Goose Creek, UT	0.015 MGD Municipal Wastewater Discharge	38° 59' 27.1" 77° 47' 21.1"	Middleburg Academy (VA0027197)
Single Family Homes			
Receiving Stream	**Description**		
Goose Creek, UT	Allen Fred Residence (VAG406470)		
Woolf's Mill Run	Latimer Howard L Residence (VAG406193)		

13. Material Storage:

There are no chemicals stored on-site.

14. Site Inspection:

A Technical Inspection was performed by Sharon (Mack) Allen on March 21, 2008. (See **Attachment 2**).

15. Receiving Stream Water Quality and Water Quality Standards:

a. Ambient Water Quality Data

This facility discharges directly into a segment of Goose Creek that has not been monitored or assessed. The closest downstream DEQ ambient and biological water quality monitoring station on Goose Creek is located approximately 3.4 miles downstream of Outfall 001. Station 1aGOO022.44 is located at the Route 734 bridge crossing. The following is the water quality summary taken from the 2012 Integrated Report for this segment of Goose Creek which also includes the freshwater probabilistic monitoring station 1AGOO021.28 downstream from Route 734:

> *Biological and associated chemical monitoring indicates that the aquatic life, recreation, fish consumption and wildlife uses are fully supporting. Citizen monitoring finds a medium probability of adverse conditions for biota, however subsequent DEQ biological monitoring has found this segment to be fully supporting for the benthics.*

b. 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 3

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report							
Goose Creek Reservoir	Fish Consumption	PCBs	19 miles	No	--	--	2018
Goose Creek*	Aquatic Life	Benthic Macroinvertebrates	20 miles	Goose Creek Benthic (Sediment) 4/26/2004	1.8 tons/yr TSS^	23 mg/L TSS --- 0.075 MGD	--

** This segment of Goose Creek is listed as not supporting the recreation use due to exceedances of E. coli bacteria in the Draft 2014 Integrated Report. The recreation use impairment was first listed in 2002 and a bacteria TMDL was completed and approved by EPA on 05/01/2003. The TMDL was modified on 10/27/2006. This facility was assigned a WLA of 2.08E+11 cfu/year of fecal coliform bacteria, based on a design flow of 0.075 MGD and a fecal coliform concentration of 200 cfu/100 ml.*

This facility was assigned a total WLA of 9 tons/year in the Benthic TMDL for the Goose Creek watershed. This total WLA was calculated based upon the permitted maximum average concentration for TSS (mg/L) and an assumption of the facility operating at 5 times the design flow. The factor of 5 for the design flow was used as a conservative measure to build in future growth in the watershed. Although the future growth for the watershed was determined by the design flow of each facility currently in the watershed, the future growth is available for both new and expanding permits in the watershed. The actual WLA for this facility without including the future growth is 1.8 tons/year.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the draft 2012 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories (wastewater, urban storm water, onsite/septic agriculture, air deposition). Fact Sheet Section 17.e provides additional information on specific nutrient monitoring for this facility to implement the provisions of the Chesapeake Bay TMDL.

The planning statement is found in **Attachment 3**.

c. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Goose Creek is located within Section 9 of the Potomac River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Some water quality criteria are dependent on temperature and pH and the total hardness of the receiving stream and final effluent. The stream and final effluent values are as follows:

1) Ammonia Criteria:
The fresh water aquatic life water quality criteria for ammonia are dependent on the instream temperature and pH. Since the effluent may have an impact on the instream values, the temperature and pH values of the effluent must also be considered when determining the ammonia criteria for the receiving stream. The 90th percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream.

Staff has used Goose Creek's stream ambient monitoring data for pH and temperature for the period of September 1974 through May 2008 to establish ammonia criteria and subsequent effluent limits. The 90th percentile values for pH and temperature are 7.9 S.U., 25°C (annual), and 17.18° C (winter high flow period).

The effluent discharge monitoring report (DMR) data for the period of November 2003 through October 2009 was used to determine the 90th percentile for pH resulting in a pH value of 7.3 S.U. Default temperature values of 25°C (annual) and 15°C (winter high flow period) were used for the effluent values.

The summary of the pH and temperature data can be found in **Attachment 4**.

2) Hardness-Dependent Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's total hardness (expressed as mg/L calcium carbonate) as well as the total hardness of the final effluent.

There is no hardness data for this facility. Staff guidance suggests using a default hardness value of 50 mg/L CaCO3 for streams east of the Blue Ridge. The receiving stream's total hardness for the period of July 1987 through July 2002 was used to determine the average total hardness value of 48 mg/L. See **Attachment 5**.

3) Bacteria Criteria:
The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli bacteria per 100 ml of water shall not exceed a monthly geometric mean of 126 n/100 ml for a minimum of four weekly samples taken during any calendar month.

The Freshwater Water Quality/Wasteload Allocation Analysis (**Attachment 6**) details other water quality criteria applicable to the receiving stream.

d. Receiving Stream Special Standards
The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Goose Creek, is located within Section 9 of the Potomac River Basin. There are no special standards designed for this section in the Water Quality Standards.

e. Threatened or Endangered Species
The Virginia DGIF Fish and Wildlife Information System Database was searched on April 8, 2015 for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: the Dwarf Wedgemussel, the Brook Floater, the Wood Turtle, the Peregrine Falcon, the Upland Sandpiper, the Loggerhead Shrike, Henslow's Sparrow, the Green Floater, and the Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect the threatened and endangered species found near the discharge. Anadromous fish use streams were not observed.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

It is staff's best professional judgment that the receiving stream be classified as Tier 1 since the stream critical flows are zero or near zero; therefore, the stream flow at times may be comprised of only effluent. The proposed permit limits have been established by determining wasteload allocations that will result in attaining and/or maintaining all water quality criteria that apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows have been determined to be zero for June through November period, the WLA values are equal to the WQS. However, for the December through May period, mixing zones are used to determine the WLA values. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. In the case of ammonia evaluations, limits are needed if the 97th percentile of the thirty-day average effluent concentration values is greater than the chronic WLA. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a. Effluent Screening:
The DMR review for the submission period of January 2010 through January 2015 shows that the weekly concentration for ammonia was exceeded in June 2011.

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, ammonia as N is likely present since this is a sewage treatment plant. **Attachment 6** details the mixing analysis results and WLA derivations for these pollutants.

b. Mixing Zones and Wasteload Allocations (WLAs):
Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{Co\,[\,Qe + (\,f\,)(Qs\,)\,] - [\,(\,Cs\,)(\,f\,)(\,Qs\,)\,]}{Qe}$$

Where:
- WLA = Wasteload allocation
- Co = In-stream water quality criteria
- Qe = Design flow
- f = Decimal fraction of critical flow from mixing evaluation
- Qs = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- Cs = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have critical flows of zero during the period of June through November due to the low volume of stream flow. As such, there is no mixing zone and the WLA is equal to the Co.

However, measurable flow is present for the December through May period. Hence, WLAs have been calculated for this period.

The Water Quality Standards contain two distinct mixing zone requirements. The first requirement is general in nature and requires the "use of mixing zone concepts in evaluating permit limits for acute and chronic standards in 9VAC25-260-140.B". The second requirement is specific and establishes special restrictions for regulatory mixing zones "established by the Board".

The Department of Environmental Quality uses a simplified mixing model to estimate the amount of mixing of a discharge with the receiving stream within specified acute and chronic exposure periods. The simplified model contains the following assumptions and approximations:

- The effluent enters the stream from the bank, either via a pipe, channel or ditch.
- The effluent velocity isn't significantly greater (no more than 1 - 2 ft/sec greater) than the stream velocity.
- The receiving stream is much wider than its depth (width at least ten times the depth).
- Diffusive mixing in the longitudinal direction (lengthwise) is insignificant compared with advective transport (flow).
- Complete vertical mixing occurs instantaneously at the discharge point. This is assumed since the stream depth is much smaller than the stream width.
- Lateral mixing (across the width) is a linear function of distance downstream.
- The effluent is neutrally buoyant (e.g. the effluent discharge temperature and salinity are not significantly different from the stream's ambient temperature and salinity).
- Complete mix is determined as the point downstream where the variation in concentration is 20% or less across the width and depth of the stream.
- The velocity of passing and drifting organisms is assumed equal to the stream velocity.

If it is suitably demonstrated that a reasonable potential for lethality or chronic impacts within the physical mixing area doesn't exist, then the basic complete mix equation, with 100% of the applicable stream flow, is appropriate. If the mixing analysis determines there is a potential for lethality or chronic impacts within the physical mixing area, then the proportion of stream flow that has mixed with the effluent over the allowed exposure time is used in the basic complete mix equation. As such, the wasteload allocation equation is modified to account for the decimal fraction of critical flow (f).

c. Effluent Limitations Toxic Pollutants -- Outfall 001
9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges. See **Attachment 7** for the toxic permit limits derivation calculations.

1) Ammonia as N:
Staff reevaluated the 90th percentile effluent and stream pH and temperature values (**Attachment 4**). These values were used to determine ammonia criteria. The existing summer ammonia monthly average permit limitation is 3.3 mg/L; calculations for this permit reissuance support maintaining this ammonia limit. Additionally, based on the ability of the sewage treatment plant to meet the current ammonia limits, the antibacksliding provisions of the Clean Water Act, and the proposed new ammonia criteria (see discussion below); the current June through November ammonia limits shall remain in the permit.

It was determined in the previous permit reissuance that no ammonia effluent limits would be required during the December through May period. This assumption was confirmed during ammonia limits re-evaluation with this permit reissuance.

DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage.

The Environmental Protection Agency (EPA) finalized new, more stringent ammonia criteria in August 2013; possibly resulting in significant reductions in ammonia effluent limitations. It is staff's best professional judgment that incorporation of these criteria into the Virginia Water Quality Standards is forthcoming within this permit cycle or in the next. Many facilities may be required to comply with new criteria.

2) Metals/Organics:
It is staff's best professional judgment that given the wastewater sources; limitations are not warranted at this time.

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants
No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD_5), total suspended solids (TSS), pH limitations, and *E. coli* limits are proposed.
D.O. and BOD_5 effluent limitations are on the Virginia water quality standards and past stream modeling referenced in the 2003 and 2010 fact sheets.

It is staff's practice to equate TSS limits with the BOD_5 limits. TSS limits based on best professional judgment are established to equal BOD_5 limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9 VAC25-260-170.

e. Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients
Nonsignificant dischargers are subject to aggregate wasteload allocations for Total Nitrogen (TN), Total Phosphorus (TP), and Sediments under the Total Maximum Daily Load (TMDL) for the Chesapeake Bay. Monitoring for TN, TP and TSS is required in order to verify the aggregate wasteload allocations. This facility is currently monitoring TSS. Therefore monitoring for the nitrogen components (TKN and Nitrate+Nitrite), TN, and TP will be required annually.

f. Effluent Limitations and Monitoring Summary:
The effluent limitations are presented in the following table. Limits were established for BOD_5, TSS, Ammonia as N (June – November), pH, D.O., and *E.coli* bacteria. Monitoring is required for nutrients (see Part I.17.e of this fact sheet).

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the current VPDES Permit Manual.

The VPDES Permit Regulation at 9 VAC 25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:
All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.075MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	1	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5 [a]	1	16 mg/L 4.5 kg/day	24 mg/L 6.8 kg/day	NA	NA	1/W	4H-C
Total Suspended Solids (TSS) [a, b]	2, 3	16 mg/L 4.5 kg/day	24 mg/L 6.8 kg/day	NA	NA	1/W	4H-C
DO	1	NA	NA	5.0 mg/L	NA	1/D	Grab
Ammonia, as N (June – Nov)	4	3.3 mg/L	4.8 mg/L	NA	NA	1/W	4H-C
E. coli (Geometric Mean) [c]	1	126 n/100ml	NA	NA	NA	1/W	Grab
Nitrate+Nitrite, as N [d]	4	NL mg/L	NA	NA	NA	1/YR	Grab
Total Nitrogen [d, e]	4	NL mg/L	NA	NA	NA	1/YR	Calculated
Total Kjeldahl Nitrogen (TKN) [d]	4	NL mg/L	NA	NA	NA	1/YR	Grab
Total Phosphorus [d]	4	NL mg/L	NA	NA	NA	1/YR	Grab

The basis for the limitations codes are:

1. Water Quality Standards
2. Best Professional Judgment
3. Current and Proposed TMDLs (see Section 15.B .of this Fact Sheet)
4. Guidance Memo No. 14-2011 –Nutrient Monitoring for "Nonsignificant" Discharges to the Chesapeake Bay Watershed

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
TIRE = Totalizing, indicating and recording equipment.
S.U. = Standard units.

1/D = Once every day.
1/W = Once every week.
1/YR = Once every calendar year.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

4H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the Monitored 4-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of four (4) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum four (4) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

a. At least 85% removal for BOD_5 and TSS shall be attained.

b. TSS shall be expressed as two significant figures.

c. Samples shall be collected between 10:00 a.m. and 4:00 p.m.

d. See Part I.B.3 of the permit -- Nutrient Reporting Calculations.

e. Total Nitrogen, which is the sum of TKN and Nitrite + Nitrate, shall be derived from the results of those tests.

20. Other Permit Requirements:

a. Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a. **95% Capacity Reopener.** The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a PVOTW.

b. **O&M Manual Requirement.** Required by the Code of Virginia at §62.1-44.19; the Sewage Collection and Treatment Regulations at 9VAC25-790; the VPDES Permit Regulation at 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

c. **CTC, CTO Requirement.** The Code of Virginia § 62.1-44.19; the Sewage Collection and Treatment Regulations at 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

d. **Licensed Operator Requirement.** The Code of Virginia at §54.1-2300 et seq., the VPDES Permit Regulation at 9VAC25-31-200 C, and the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations at 18VAC160-20-10 et seq. requires licensure of operators. This facility requires a Class III operator.

e. **Reliability Class.** The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a Reliability Class of II.

f. **Water Quality Criteria Reopener.** The VPDES Permit Regulation at 9VAC25-31-220 D requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

g. **Sludge Reopener.** The VPDES Permit Regulation at 9VAC25-31-220.C requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

h. **Sludge Use and Disposal.** The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2, and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

i. **Nutrient Reopener.** 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

j. **TMDL Reopener.** This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. Permit Section Part II.

Required by VPDES Regulation 9VAC25-31-190, Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:
   1) The Nutrient Reopener Special Condition has been added..
   2) A TMDL Special Condition has been added.
   3) The Treatment Works Closure Plan has been removed.

b. Monitoring and Effluent Limitations:
   Monitoring for TN, TP, Total Kjeldahl Nitrogen, and Nitrate+Nitrite has been added to the permit in accordance with Guidance Memo No. 14-2011 –Nutrient Monitoring for "Nonsignificant" Discharges to the Chesapeake Bay Watershed.

24. Variances/Alternate Limits or Conditions:

This permit contains no variances/alternate limits or conditions.

25. Public Notice Information:

First Public Notice Date: 5/20/2015 Second Public Notice Date: 5/27/2015

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583- 3837, anna.westernik@deq.virginia.gov. See **Attachment 8** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. Additional Comments:

Previous Board Action(s): None.

Staff Comments: On April 8, 2015, the Threatened and Endangered Species Coordination Form and the threatened and endangered species search was sent to the Department of Game and Inland Fisheries (DGIF). The following is the response in part from Ernie Aschenbach, Environmental Services Biologist, with DGIF.

According to our records, the receiving reach of the Goose Creek is designated T&E species water for the ST Green Floater Mussel. Provided adherence to the following recommendations and the effluent characteristics and permit conditions, we do not anticipate the reissuance of this permit to result in adverse impact to resources under our purview. We reiterate our ongoing recommendation to use ultraviolet (UV) disinfection (rather than chlorination disinfection), if practicable. If chlorination becomes necessary and is used, we recommend dechlorination, prior to discharge. Freshwater mussels are known to be sensitive to ammonia. The ammonia limits within the 2013 EPA rule are the best information currently available regarding ammonia levels protective of mussels (not T&E mussels, any mussel species). Therefore, we recommend the EPA values being implemented in

this permit for this and all future VPDES permits, if practicable. If this is not practicable, we recommend DEQ email the effluent characteristics of the discharge to our ProjectReview email, in order for DGIF to provide more detailed recommendations.

On April 10, 2015, the Threatened and Endangered Species Coordination Form and the threatened and endangered species search was sent to the Department of Conservation and Recreation (DCR). The following is the response in part from S. René Hypes, Project Review Coordinator, with DCR.

The receiving stream has a highly significant biodiversity ranking, has a relative regional significance, holds a "Healthy" stream designation, and contributes to high biological integrity at the watershed level based on the number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

To minimize impacts to aquatic resources, DCR supports the use of UV/ozone to replace chlorination disinfection and utilization of new technologies as they become available to improve water quality.

The threatened and endangered species comment summaries can be found in **Attachment 9.**

Public Comment: No comments were received during the public notice period.

Foxcroft School Wastewater Treatment Plant
Fact Sheet Attachments

Attachment	Description
1	Flow Frequency Determination
2	Site Inspection Report conducted on March 21, 2008, by Sharon Allen, DEQ-NRO Water Inspector
3	Planning Statement
4	pH and Temperature Data
5	Hardness Data
6	Freshwater Water Quality Criteria/Wasteload Allocated Analysis/Mixing Zone Calculations
7	Toxic Permit Limits Derivation Calculations
8	Public Notice
9	Threatened and Endangered Species Responses

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Foxcroft School STP - VA#0024112

TO: Doug Stockman, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: June 15, 1998

COPIES: Ron Gregory, Charles Martin, File

This memo supercedes my September 20, 1993 memo to Ray Jay concerning the subject VPDES permit.

The Foxcroft School STP discharges to the Goose Creek near Leithtown, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The VDEQ operated a continuous record gage on the Goose Creek near Middleburg, VA (#01643700) from 1965 to 1967 and from 1969 to 1996. The gage was located upstream of the discharge point at the Route 611 bridge in Loudoun County, VA. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

Goose Creek near Middleburg, VA (#01643700):

Drainage Area = 123 mi^2

1Q10 = 0.0 cfs	High Flow 1Q10 = 8.6 cfs
7Q10 = 0.004 cfs	High Flow 7Q10 = 11.2 cfs
30Q5 = 1.55 cfs	HM = 0.0 cfs

Goose Creek at outfall:

Drainage Area = 151.63 mi^2

1Q10 = 0.0 cfs	High Flow 1Q10 = 10.6 cfs 6.85
7Q10 = 0.005 cfs 0.0	High Flow 7Q10 = 13.8 cfs 8.92
30Q5 = 1.91 cfs 1.23	HM = 0.0 cfs

The high flow months are December through May. If you have any questions concerning this analysis, please let me know.

Addendum to Interoffice Memorandum "Flow Frequency Determination, Foxcroft School STP – VA#0024112 dated June 15, 1998 from Paul Herman to Doug Stockman.

Date: January 13, 2010

From: Joan C. Crowther

Based on Goose Creek stream data collected during this timeframe 1965-67, 1969-96, 2001-2006, the Goose Creek stream flow at the outfall as been recalculated as follows:

Goose Creek (01643700) Drainage Area 123 mi^2 High flows months are December – May.

	cfs	MGD
7Q10	0.02	0.13
1Q10	0.00	0.00
30Q5	0.6	0.39
30Q10	0.13	0.08
HM	Not Determined	

	cfs	MGD
High Flow 7Q10	6.7	4.3
High 1Q10	5.6	3.62
High 30Q10	11	7.1

Goose Creek at Outfall – Drainage Area 151.63 mi^2

	cfs	MGD
7Q10	0.025	0.13
1Q10	0.00	0.00
30Q5	0.74	0.48
30Q10	0.16	0.10
HM	Not Determined	

	cfs	MGD
High Flow 7Q10	8.23	5.32
High 1Q10	6.9	4.46
High 30Q10	13.56	8.8

Attachment 1

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3801
www.deq.virginia.gov

Preston Bryant
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

April 22, 2008

Richard Bettencourt
Business Manager
P.O. Box 5555
Middleburg, VA, 20118

Re: Foxcroft School STP, Permit #VA0024112

Dear Mr. Bettencourt:

Enclosed are copies of the technical and laboratory inspection reports generated from observations made while performing a Facility Technical Inspection at Foxcroft School – Sewage Treatment Plant (STP) on March 21, 2008. The compliance staff would like to thank Steve Cawthron and Charlie Triplett for their time and assistance during the inspection.

Summaries for both the technical and laboratory inspections are enclosed. The facility had Deficiencies for the laboratory inspection. Please submit in writing a progress report to this office by May 21, 2008 for the items addressed. Your response may be sent either via the US Postal Service or electronically, via E-mail. If you chose to send your response electronically, we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format. Additional inspections may be conducted to confirm that the facility is in compliance with permit requirements.

Attachment 2

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Regional Office at (703) 583-3882 or by E-mail at smmack@deq.virginia.gov.

Sincerely,

Sharon Mack

Sharon Mack
Environmental Specialist II

cc: Permits / DMR File, Compliance Manager
Compliance Inspector, Compliance Auditor
Steve Stell - OWCP
Steve Cawthron - Apex, Inc.

DEQ
WASTEWATER FACILITY INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0024112	**January 20, 2004**		**January 19, 2009**

Facility Name	Address	Telephone Number
Foxcroft School STP	**22407 Foxhound Lane Middleburg, VA**	**(540)687-5555**
Owner Name	Address	Telephone Number
Foxcroft School	**P.O. Box 5555 Middleburg, Virginia 20118**	**(540)687-5555**
Responsible Official	Title	Telephone Number
Richard Bettencourt	**Business Manager**	**540-687-4401**
Responsible Operator	Operator Cert. Class/number	Telephone Number
Steve Cawthron	**Class 1; 1909000301**	**(703) 737-7091**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal	**X**	Minor	**X**	Minor		Secondary	

INFLUENT CHARACTERISTICS:		DESIGN:	
[redacted]	Flow	**0.075 MGD**	[redacted]
	Population Served	**~ 300 (varies w/ the school year)**	
	Connections Served	**48**	

EFFLUENT LIMITS:

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
Flow, MGD		**NL**	**NA**	**DO, mg/L**	**5.0**		
pH, s.u.	**6.0**		**9.0**	**TSS, mg/l**		**16**	**24**
BOD5, mg/L		**16**	**24**	**Ammonia-N (June – Nov) mg/L**		**3.3**	**4.8**
E. coli, n/100 ml		**126**					

[redacted]	Receiving Stream	**Goose Creek**	[redacted]
	Basin	**Potomac River**	
	Discharge Point (LAT)	**39° 00′ 30″**	
	Discharge Point (LONG)	**77° 45′ 00″**	

VPDES NO. **VA0024112**

REV 5/00

DEQ
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date: **March 21, 2008**

Date form completed: **April 21, 2008**

Inspection by: **Sharon Mack**

Inspection agency: **DEQ NRO**

Time spent: **20 hrs**

Announced: **Yes**

Reviewed by:

Scheduled: **Yes**

Present at inspection: **Steve Cawthron, Charlie Triplett – Apex, Inc**

TYPE OF FACILITY:

	Domestic	**Industrial**	
[ ] Federal	[ ] Major	[ ] Major	[ ] Primary
[**X**] Nonfederal	[**X**] Minor	[ ] Minor	[ ] Secondary

Type of inspection:

[**X**] Routine
[ ] Compliance/Assistance/Complaint
[ ] Reinspection

Date of last inspection: **September 18, 2002**
Agency: **DEQ NRO**

Population served: approx. **300**

Connections served: approx. **48**

Last month average: (Effluent) **February 2008**:

Flow:	**.01998**	MGD	pH:	**6.9**	s.u.	DO	**8.6**	mg/L
TSS	**13**	mg/L	BOD_5	**2**	mg/L	E. coli	**<2**	per 100 ml

Quarter average: (Effluent) **Dec 2007, Jan-Feb 2008**

Flow:	**0.0141**	MGD	pH:	**7.9**	s.u.	DO	**9.5**	mg/L
TSS	**11.3**	mg/L	BOD_5	**2.1**	mg/L	E. coli	**<2**	per 100 ml

DATA VERIFIED IN PREFACE [**X**] Updated [ ] No changes

Has there been any new construction? [ ] Yes [**X**] No

If yes, were plans and specifications approved? [ ] Yes [ ] No [**X**] NA

DEQ approval date: **NA**

(C) SAMPLING

1. Do sampling locations appear to be capable of providing representative samples? [**X**] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
4. Are composite samples collected in proportion to flow? [**X**] Yes [ ] No* [ ] NA
5. Are composite samples refrigerated during collection? [**X**] Yes [ ] No* [ ] NA
6. Does plant maintain required records of sampling? [**X**] Yes [ ] No*
7. Does plant run operational control tests? [**X**] Yes [ ] No

Comments:

(D) TESTING

1. Who performs the testing? [**X**] Plant [ ] Central Lab [**X**] Commercial Lab
   DO, pH

   Name:
   ESS- Ammonia-N, $CBOD_5$, TSS, E. coli

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **NA- system has UV disinfection**
3. Does plant appear to have sufficient equipment to perform required tests? [**X**] Yes [ ] No*
4. Does testing equipment appear to be clean and/or operable? [**X**] Yes [ ] No*

Comments:

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
   [ ] Yes [ ] No [**X**] NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
   [ ] Yes [ ] No [**X**] NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:
   [ ] Yes [ ] No* [**X**] NA

Comments:

UNIT PROCESS: Screening/Comminution

1.	Number of Units:	Manual:	**1**	Mechanical:	**1**
	Number in operation:	Manual:	**0**	Mechanical:	**1**
2.	Bypass channel provided: Bypass channel in use:		[**X**] Yes [ ] Yes	[ ] No* [**X**] No	
3.	Area adequately ventilated:		[**X**] Yes	[ ] No*	
4.	Alarm system for equipment failure or overloads:		[ ] Yes	[**X**] No*	
5.	Proper flow distribution between units:		[ ] Yes	[ ] No	[**X**] NA
6.	How often are units checked and cleaned?		**Daily**		
7.	Cycle of operation:		**Continuous**		
8.	Volume of screenings removed:		**One pound per day**		
9.	General condition:		[**X**] Good	[ ] Fair	[ ] Poor

Comments:

- **Grit settles out in the aeration basins/clarifiers and is collected in the sludge holding tank.**
- **Influent flow at time of inspection was about 13,000 gpd- the students were out on spring break.**
- **Lime may be added at either the comminutor or the aeration basin for pH adjustment.**
- **A new walkway between Sludge Holding Tank and the aeration basins has been installed.**

UNIT PROCESS: Activated Sludge Aeration

1. Number of units: **2** In operation: **2**

2. Mode of operation: **Extended aeration**

3. Proper flow distribution between units: [**X**] Yes [ ] No* [ ] NA

4. Foam control operational: [ ] Yes [ ] No* [**X**] NA

5. Scum control operational: [ ] Yes [ ] No* [**X**] NA

6. Evidence of following problems:
   a. dead spots [ ] Yes* [**X**] No
   b. excessive foam [ ] Yes* [**X**] No
   c. poor aeration [ ] Yes* [**X**] No
   d. excessive aeration [ ] Yes* [**X**] No
   e. excessive scum [ ] Yes* [**X**] No
   f. aeration equipment malfunction [ ] Yes* [**X**] No
   g. other (identify in comments) [ ] Yes* [**X**] No

7. Mixed liquor characteristics (as available):

	Basin 1	Basin 2
pH:	**6.4 s.u.**	**6.7 s.u.**
MLSS:	**See comments**	
DO:	**6.0 mg/L**	**10.0 mg/L**
Color:	**Dark brown**	
Odor:	**Earthy**	
Settleability:	**225 ml/L**	**175 ml/L**

8. Return/waste sludge:
   A. Return Rate: **Not measured: 100 % or better based on visual assessment of flows.**
   b. Waste Rate: **Not metered- 5-15 minutes at a time.**
   c. Frequency of Wasting: **As needed- usually once per week in warmer months; less often in cooler weather.**

9. Aeration system control: [ ] Time Clock [**X**] Manual [ ] Continuous [ ] Other (explain)

10. Effluent control devices working properly (oxidation ditches): [ ] Yes [ ] No* [**X**] NA

11. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

7. MLSS usually done once per month but has not been done for the past 2 months. Samples must be taken off site to run the analysis- facility does not have equipment to run on-site.

8. The goal of wasting is to keep the sludge blanket at about 1 ft in the clarifiers.

- **The technical inspection report of Sept. 2002 notes that one aeration basin had been taken off line & used a sludge holding tank. Both Aeration basins are again used as aeration basins.**

- **Plant has 2 blowers with different capacities- currently running blower # 2**

UNIT PROCESS: Sedimentation

[ ] Primary [X] Secondary [ ] Tertiary

1.	Number of units: **2**	In operation: **2**		
2.	Proper flow distribution between units:	[X] Yes	[ ] No*	[ ] NA
3.	Signs of short circuiting and/or overloads:	[ ] Yes	[X] No	
4.	Effluent weirs level: Clean:	[X] Yes [ ] Yes	[ ] No* [ ] No*	
5.	Scum collection system working properly:	[X] Yes	[ ] No*	[ ] NA
6.	Sludge collection system working properly:	[X] Yes	[ ] No*	
7.	Influent, effluent baffle systems working properly:	[X] Yes	[ ] No*	
8.	Chemical addition: Chemicals:	[ ] Yes **NA**	[X] No	
9.	Effluent characteristics:	**slightly murky**		
10.	General condition:	[X] Good	[ ] Fair	[ ] Poor

Comments:

4. Two sump pumps have been installed at the effluent channels to aid in cleaning, "power wash", the weirs. Water is sent back to the head of the clarifiers. The cleaning process was demonstrated during this inspection.

UNIT PROCESS: Flow Measurement

[ ] Influent [ ] Intermediate [**X**] Effluent

1.	Type measuring device:	**Ultrasonic transducer**		
2.	Present reading:	**0.011 MGD @ 1030**		
3.	Bypass channel:	[ ] Yes	[**X**] No	
	Metered:	[ ] Yes	[ ] No	[**X**] NA
4.	Return flows discharged upstream from meter:		[ ] Yes	[**X**] No
	Identify:	**NA**		
5.	Device operating properly:	[**X**] Yes	[ ] No*	
6.	Date of last calibration:	**July 3, 2007.**		
7.	Evidence of following problems:			
	a. obstructions	[ ] Yes*	[**X**] No	
	b. grease	[ ] Yes*	[**X**] No	
8.	General condition:	[**X**] Good	[ ] Fair	[ ] Poor

Comments:

1. Located just prior to the UV system.

UNIT PROCESS: Ultraviolet (UV) Disinfection

1.	Number of UV lamps/assemblies:	**2**	In operation:	**2**	
2.	Type of UV system and design dosage:		**Trojan 2000**		
3.	Proper flow distribution between units:		[**X**] Yes	[ ] No*	[ ] NA
4.	Method of UV intensity monitoring:		**intensity meters**		
5.	Adequate ventilation of ballast control boxes:		[**X**] Yes	[ ] No*	[ ] NA
6.	Indication of on/off status of all lamps provided:		[**X**] Yes	[ ] No*	
7.	Lamp assemblies easily removed for maintenance:		[**X**] Yes	[ ] No*	
8.	Records of lamp operating hours and replacement dates provided:		[**X**] Yes	[ ] No*	
9.	Routine cleaning system provided:		[**X**] Yes	[ ] No*	
	Operate properly:		[**X**] Yes	[ ] No*	
	Frequency of routine cleaning:		**daily- cleaned w/Lime away every Friday**		
10.	Lamp energy control system operate properly:		[**X**] Yes	[ ] No*	
11.	Date of last system overhaul:		**March 2008**		
	a. UV unit completely drained		[ ] Yes	[ ] No*	
	b. all surfaces cleaned		[**X**] Yes	[ ] No*	
	c. UV transmissibility checked		[**X**] Yes	[ ] No*	
	d. output of selected lamps checked		[ ] Yes	[**X**] No*	
	e. output of tested lamps		**NA**		
	f. total operating hours, oldest lamp/assembly		**Unknown**		
	g. number of spare lamps and ballasts available:	lamps:	**10**	ballasts:	**2**
12.	UV protective eyeglasses provided:		[**X**] Yes	[ ] No*	
13.	General condition:		[**X**] Good	[ ] Fair	[ ] Poor

Comments:

4. One IT read 0.6, other 33.0. AS demonstrated, the IT reading changes as racks are jiggled or flow varies; used as a reference of how well system is working but true performance is evaluated by the bacti samples.

8. Replaced every 6-9 months. Planned for week of March 23rd.

11. A new order is being placed to restock the 16 bulbs & O-rings used in March. Spare parts on site also include about 16 new quartz sleeves, and a spare sensor.

UNIT PROCESS: Post Aeration

1. Number of units: **1** In operation: **1**

2. Proper flow distribution between units: [ ] Yes [**X**] No* [ ] NA

3. Evidence of following problems:

a. dead spots	[ ] Yes*	[**X**] No	
b. excessive foam	[ ] Yes*	[**X**] No	
c. poor aeration	[ ] Yes*	[**X**] No	
d. mechanical equipment failure	[ ] Yes*	[ ] No	[**X**] NA

4. How is the aerator controlled? [ ] Time clock [ ] Manual [ ] Continuous
[ ] Other* [**X**] NA

5. What is the current operating schedule? **Continuous**

6. Step weirs level: [ ] Yes [ ] No [**X**] NA

7. Effluent D.O. level: **Analyzed in situ at 1212 by S. Cawthron and S. Mack**
Plant = 9.74 mg/L @ 10.9 °C
DEQ = 9.23 mg/L @ 10.9 °C

8. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

UNIT PROCESS: Effluent/Plant Outfall

1.	Type Outfall	[**X**] Shore based		[ ] Submerged		
2.	Type if shore based:	[ ] Wingwall		[ ] Headwall	[ ] Rip Rap	[**X**] Other
3.	Flapper valve:	[ ] Yes	[**X**] No	[ ] NA		
4.	Erosion of bank:	[ ] Yes	[**X**] No	[ ] NA **See Comments**		
5.	Effluent plume visible?	[ ] Yes*	[**X**] No			
6.	Condition of outfall and supporting structures:			[**X**] Good	[ ] Fair	[ ] Poor*

7. Final effluent, evidence of following problems:

a. oil sheen	[ ] Yes*	[**X**] No
b. grease	[ ] Yes*	[**X**] No
c. sludge bar	[ ] Yes*	[**X**] No
d. turbid effluent	[ ] Yes*	[**X**] No
e. visible foam	[ ] Yes*	[**X**] No
f. unusual color	[ ] Yes*	[**X**] No

Comments:

2. None of above

4. At the permit reissuance inspection it was observed that the outfall had been buried by natural sedimentation/siltation of the creek. As per Tom Faha's request, a channel was dug out from the end of the pipe to the creek to transport effluent into the stream by August 2004.

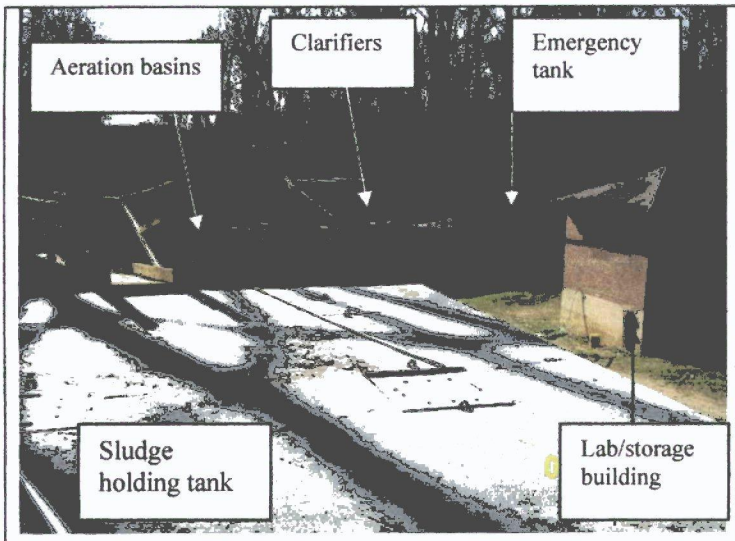
- **The outfall is about ½ mile away from plant. It is visually checked once a month.**

UNIT PROCESS: Sludge Holding tank

1. Number of units:	**1**	In operation:	**1**
2. Type of sludge treated	[ ] Primary	[**X**] WAS	[ ] Other
3. Frequency of sludge application to digestors:	**Once per week in warmer months less in cooler.**		
4. Supernatant return rate:	**Not measured**		
5. pH adjustment provided:	[ ] Yes	[**X**] No	
Utilized:	[ ] Yes	[ ] No	[**X**] NA
6. Tank contents well-mixed and relatively free of odors:		[**X**] Yes	[ ] No*
7. If diffused aeration is used, do diffusers require frequent cleaning?	[ ] Yes	[ ] No	[**X**] NA
8. Location of supernatant return:	[**X**] Head	[ ] Primary	[ ] Other
9. Process control testing:	**None**		
a. reduction of volatile solids	[ ] Yes	[ ] No	
b. pH	[ ] Yes	[ ] No	
c. alkalinity	[ ] Yes	[ ] No	
d. dissolved oxygen	[ ] Yes	[ ] No	
10. Foaming problem present:	[ ] Yes*	[**X**] No	
11. Signs of short-circuiting or overloads:	[ ] Yes*	[**X**] No	
12. General condition:	[**X**] Good	[ ] Fair	[ ] Poor

Comments:

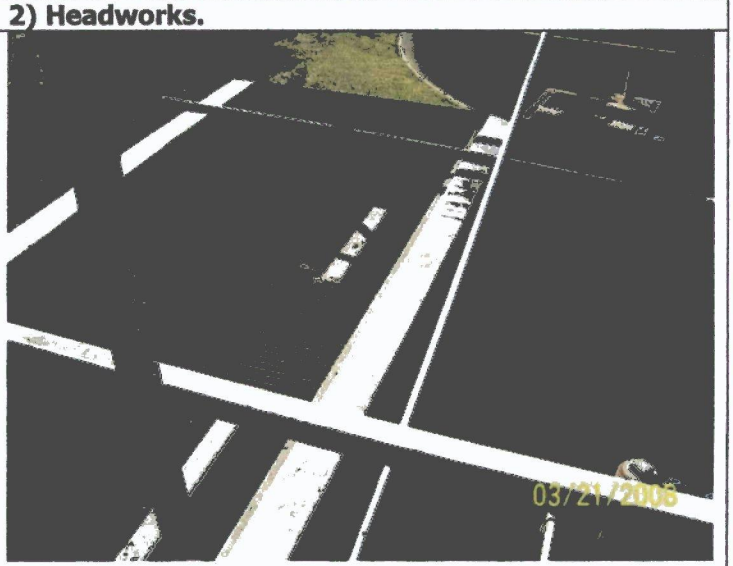
1. **The sludge holding tank was very full. It was scheduled to be emptied pumped on March 24th. Sludge is pumped and hauled to Blue Plains Interceptor**



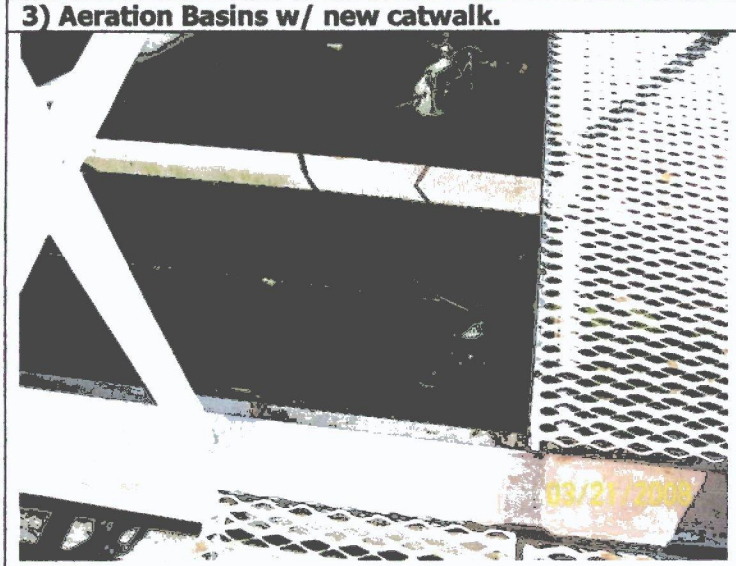
1) Overview of plant (photo brightened).

2) Headworks.

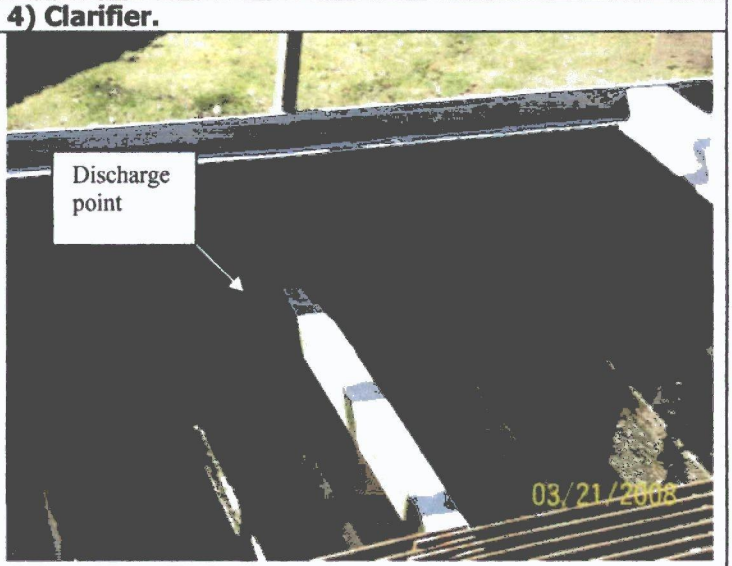
3) Aeration Basins w/ new catwalk.



4) Clarifier.



5) New sump pumps for cleaning clarifier troughs.

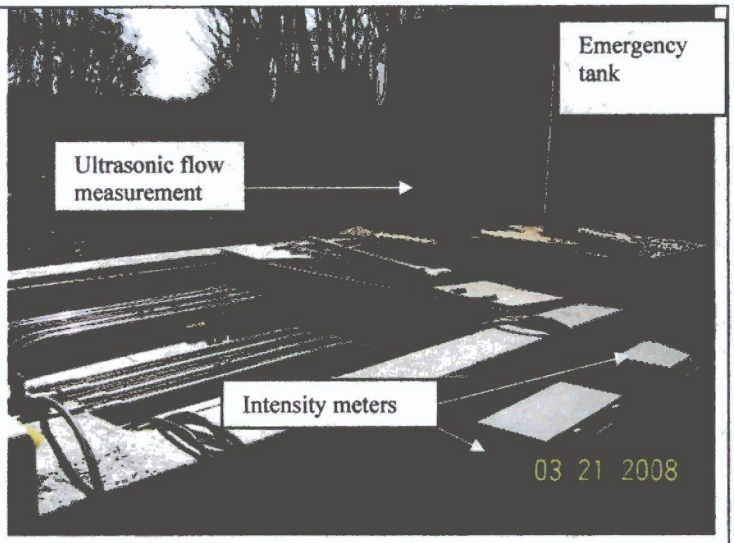


6) Clarifier discharge trough.

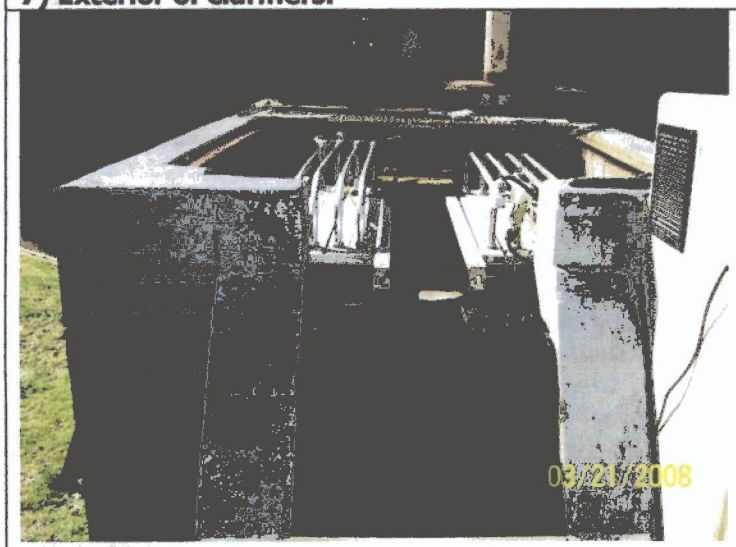
Facility name: Foxcroft School STP
Site Inspection Date: March 21, 2008

VPDES Permit No. VA0024112
Photos & Layout by: Sharon Mack

7) Exterior of clarifiers.



8) UV system.



9) Post aeration of discharge from the UV system.

10) Outfall 001 into Goose Creek.

11) Outfall 001.

Facility name: Foxcroft School STP
Site Inspection Date: March 21, 2008

VPDES Permit No. VA0024112
Photos & Layout by: Sharon Mack

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
LABORATORY INSPECTION REPORT

10/01

FACILITY NO: VA0024112	INSPECTION DATE: March 21, 2008	PREVIOUS INSP. DATE: Sept. 18, 2002	PREVIOUS EVALUATION: No Deficiencies	TIME SPENT: 5 hrs

NAME/ADDRESS OF FACILITY:	FACILITY CLASS:	FACILITY TYPE:	UNANNOUNCED INSPECTION?	FY-SCHEDULED INSPECTION?
Foxcroft School STP 22407 Foxhound Lane Middleburg, VA	( ) MAJOR (X) MINOR ( ) SMALL ( ) VPA/NDC	(X) MUNICIPAL ( ) INDUSTRIAL ( ) FEDERAL ( ) COMMERCIAL LAB	( ) YES (X) NO	(X) YES ( ) NO

INSPECTOR(S):	REVIEWERS:	PRESENT AT INSPECTION:
Sharon Mack		Steve Cawthron Charlie Triplett

LABORATORY EVALUATION	DEFICIENCIES? Yes	No
LABORATORY RECORDS		X
GENERAL SAMPLING & ANALYSIS		X
LABORATORY EQUIPMENT		X
DISSOLVED OXYGEN ANALYSIS PROCEDURES		X
pH ANALYSIS PROCEDURES	X	

QUALITY ASSURANCE/QUALITY CONTROL

Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
N	REPLICATE SAMPLES	pH	
N	SPIKED SAMPLES		
Y	STANDARD SAMPLES	pH	Daily
N	SPLIT SAMPLES		
N	SAMPLE BLANKS		
N	OTHER		
N	EPA-DMR QA DATA?	RATING: ( ) No Deficiency ( ) Deficiency (X) NA	
N	QC SAMPLES PROVIDED?	RATING: ( ) No Deficiency ( ) Deficiency (X) NA	

FACILITY #: **VA0024112**

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

X	SAMPLING DATE	X	ANALYSIS DATE		CONT MONITORING CHART
X	SAMPLING TIME	X	ANALYSIS TIME	X	INSTRUMENT CALIBRATION
	SAMPLE LOCATION	X	TEST METHOD	X	INSTRUMENT MAINTENANCE
				X	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

X	SAMPLING SCHEDULES		CALCULATIONS	X	ANALYSIS PROCEDURES

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	X		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	X		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: **February 2008**	X		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	X		

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	X		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	X		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?	X		
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?	X		
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: **BOD5, TSS, E. coli, Ammonia-N** **ESS, Ltd.** **P.O. Box 520** **Culpeper, VA 22701**	X		

LABORATORY EQUIPMENT SECTION

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	X		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	X		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			X
ARE ANALYTICAL BALANCE(S) ADEQUATE?			X

LABORATORY INSPECTION REPORT SUMMARY

FACILITY NAME: Foxcroft School STP	FACILITY NO: VA0024112	INSPECTION DATE: March 21, 2008
(X) Deficiencies	( ) No Deficiencies	

LABORATORY RECORDS

The Laboratory Records section had **No Deficiencies** noted during the inspection.

GENERAL SAMPLING AND ANALYSIS

The General Sampling and Analysis section had **No Deficiencies** noted during the inspection.

LABORATORY EQUIPMENT

The Laboratory Equipment section had **No Deficiencies** noted during the inspection.

Thermometers for the sample refrigerator and composite sampler were checked against an NIST certified thermometer on March 10, 2008 by C. Triplett.

INDIVIDUAL PARAMETERS

DO

The analysis for the parameter of Dissolved Oxygen (DO) had **No Deficiencies** noted during the inspection.

pH

The analysis for the parameter of pH had **Deficiencies** noted during the inspection.

- **A certificate of operator competence or initial demonstration of capability was not available for either operator.**
- **Duplicates had not been run every 20 samples at the time of this inspection, but the benchsheet was modified and duplicates analyzed and recorded starting March 31st.**
- **The plant did not have a written procedure for analyzing/recording duplicates.**

COMMENTS

The staff should check the DEQ website at http://www.deq.state.va.us/vpdes/checklist.html and download the most recent inspection check sheets to keep up to date with changes in minimal laboratory requirements. Some of these have been up dated as recently as March 2008.

ANALYST:	**Steve Cawthron**	VPDES NO.	**VA0024112**

Parameter: Dissolved Oxygen
Method: Electrode
01/08

Meter: YSI 50B

METHOD OF ANALYSIS:

X	18th Edition of Standard Methods-4500-O G
	21st or Online Editions of Standard Methods-4500-O G (01)

	DO is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]	**Y**	**N**
1)	If samples are collected, is collection carried out with a minimum of turbulence and air bubble formation and is the sample bottle allowed to overflow several times its volume? [B.3]	**In situ**	
2)	Are meter and electrode operable and providing consistent readings? [3]	**X**	
3)	Is membrane in good condition without trapped air bubbles? [3.b]	**X**	
4)	Is correct filling solution used in electrode? [Mfr.]	**X**	
5)	Are water droplets shaken off the membrane prior to calibration? [Mfr.]	**X**	
6)	Is meter calibrated before use or at least daily? [Mfr.]	**X**	
7)	Is calibration procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
8)	Is sample stirred during analysis? [Mfr.]	**In situ**	
9)	Is the sample analysis procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
10)	Is meter stabilized before reading D.O.? [Mfr.]	**X**	
11)	Is electrode stored according to manufacturer's instructions? [Mfr.]	**X**	
12)	Is a duplicate sample analyzed after every 20 samples if citing 18th or 19th Edition [1020 B.6] or after every 10 samples for 20th or 21st Edition [Part 1020] Note: Not required for *in situ* samples.	**NA**	
13)	If a duplicate sample is analyzed, is the reported value for that sampling event, the average concentration of the sample and the duplicate? [DEQ]	**NA**	
14)	If a duplicate sample is analyzed, is the relative percent difference (RPD) < 20? [18th ed. Table 1020 I; 21st ed. DEQ]	**NA**	

COMMENTS:	➢ **Thermister was checked against an NIST certified thermometer on 3-10-08. Correction factor = - 0.2 mg/L.**
PROBLEMS:	**None noted or discussed**

ANALYST:	**Steve Cawthron**	VPDES NO	**VA0024112**

Parameter: Hydrogen Ion (pH)
Method: Electrometric
01/08

METHOD OF ANALYSIS

X	18th Edition of Standard Methods-4500-H-B
	21st or On-Line Edition of Standard Methods-4500-H-B (00)

	pH is a method defined analyte so modifications are not allowed. [40 CFR Part 136.6]	**Y**	**N**
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing the analysis? **NOTE:** Analyze 4 samples of known pH. May use external source of buffer (different lot/manufacturer than buffers used to calibrate meter). Recovery for each of the 4 samples must be ± 0.1 SU of the known concentration of the sample. [SM 1020 B.1]		**X**
2)	Is the electrode in good condition (no chloride precipitate, etc.)? [2.b/c and 5.b]	**X**	
3)	Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]	**X**	
4)	Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [4.a] NOTE: Follow manufacturer's instructions.	**X**	
5)	After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Agreement should by within ± 0.1 SU. [4.a]	**X**	
6)	Do the buffer solutions appear to be free of contamination or growths? [3.1]	**X**	
7)	Are buffer solutions within their listed shelf life or have they been prepared within the last 4 weeks? [3.a]	**X**	
8)	Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]	**X**	
9)	For meters with ATC that also have temperature display, was the thermometer calibrated annually? [SM2550 B.1]	**X**	
10)	Is the temperature of buffer solutions and samples recorded when determining pH? [4.a]	**X**	
11)	Is sample analyzed within 15 minutes of collection? [40 CFR 136.6]	**X**	
12)	Was the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinse solution)? [4.a]	**X**	
13)	Is the sample stirred gently at a constant speed during measurement? [4.b]	**X**	
14)	Does the meter hold a steady reading after reaching equilibrium? [4.b]	**X**	
15)	Is a duplicate sample analyzed after every 20 samples if citing 18th or 19th Edition [1020 B.6] or after every 10 samples for 20th or 21st Edition [Part 1020] Note: Not required for *in situ* samples.		**X**
16)	Is pH of duplicate samples within 0.1 SU of the original sample? [Part 1020]	**NA**	
17)	Is there a written procedure for which result will be reported on DMR (Sample or Duplicate) and is this procedure followed? [DEQ]		**X**

COMMENTS:	**4) 2 buffer calibration** ➢ **Thermister was checked against an NIST certified thermometer on 3-10-08. Correction factor = 0.**
PROBLEMS:	**1) This requirement was discussed during the inspection and a copy of DEQ's guidance on how to do was emailed to S. Cawthron.** **15, 17) Requirements for duplicates was discussed during the inspection.**

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
SAMPLE ANALYSIS HOLDING TIME/CONTAINER/PRESERVATION CHECK SHEET
Revised 3/08 [40 CFR, Part 136.3, Table II]

FACILITY NAME:	**Foxcroft School STP**	VPDES NO	**VA0024112**	DATE:	**March 21, 2008**

HOLDING TIMES						SAMPLE CONTAINER				PRESERVATION				
PARAMETER	APPROVED	MET?		LOGGED?		ADEQ. VOLUME		APPROP. TYPE		APPROVED	MET?		CHECKED?	
		Y	N	Y	N	Y	N	Y	N		Y	N	Y	N
BOD5 & CBOD5	48 HOURS	**X**		**X**		**X**		**X**		ANALYZE 2 HRS or 6°C	**X**		**X**	
TSS	7 DAYS	**X**		**X**		**X**		**X**		6°C	**X**		**X**	
FECAL COLIFORM / *E. coli / Enterococci*	6 HRS & 2 HRS TO PROCESS	**See comments**				**X**		**X**		10°C (1 HOUR)+ 0.008% $Na_2S_2O_3$	**X**		**X**	
pH	15 MIN.	**X**		**X**						N/A				
DISSOLVED O_2	15 MIN./IN SITU	**X**		**X**						N/A				

PROBLEMS: Not enough information was included on the Certificate of Analysis to determine compliance with hold times for bacteriological (bacti) samples for E. coli..

The Chain of Custody completed for February 25th shows that the bacti sample was collected at Foxcroft School at 0937 and received at the ESS laboratory at 1053 on February 25th. However, the Certificate of Analysis shows that this sample was analyzed on February 25th at 0800. Please have the laboratory resolve this discrepancy.

To:	Joan Crowther
From:	Jennifer Carlson
Date:	March 12, 2015
Subject:	Planning Statement for Foxcroft School Wastewater Treatment Plant
Permit Number:	VA0024112

Information for Outfall 001:

Discharge Type: Municipal Minor
Discharge Flow: 0.075 MGD
Receiving Stream: Goose Creek
Latitude / Longitude: 39° 00' 21" / 77° 44' 38"
Rivermile: 25.98
Streamcode: 1aGOO
Waterbody: VAN-A05R
Water Quality Standards: Section 9, Class III, Special Standards None
Drainage Area: 151.63 sq mi

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

   This facility discharges directly into a segment of Goose Creek that has not been monitored or assessed. The closest downstream DEQ ambient water quality monitoring station on Goose Creek is located approximately 3.4 miles downstream of Outfall 001. Station 1aGOO022.44 is located at the Route 734 bridge crossing. The following is the water quality summary for this segment of Goose Creek, as taken from the 2012 Integrated Report:

   Class III, Section 9.

   DEQ monitoring stations located in this segment of Goose Creek:
   - *Ambient and biological station 1AGOO022.44, at Route 734*
   - *Freshwater probabilistic monitoring station 1AGOO021.28 downstream from Route 734*

   Biological and associated chemical monitoring indicates that the aquatic life, recreation, fish consumption and wildlife uses are fully supporting. Citizen monitoring finds a medium probability of adverse conditions for biota, however subsequent DEQ biological monitoring has found this segment to be fully supporting for the benthics.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

   No.

Attachment 3

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report							
Goose Creek Reservoir	Fish Consumption	PCBs	19 miles	No	--	--	2018
Goose Creek*	Aquatic Life	Benthic Macroinvertebrates	20 miles	Goose Creek Benthic (Sediment) 4/26/2004	1.8 tons/yr TSS^	23 mg/L TSS --- 0.075 MGD	--

* This segment of Goose Creek is listed as not supporting the recreation use due to exceedances of *E. coli* bacteria in the Draft 2014 Integrated Report. The recreation use impairment was first listed in 2002 and a bacteria TMDL was completed and approved by EPA on 05/01/2003. The TMDL was modified on 10/27/2006. This facility was assigned a WLA of 2.08E+11 cfu/year of fecal coliform bacteria, based on a design flow of 0.075 MGD and a fecal coliform concentration of 200 cfu/100 ml.

^This facility was assigned a total WLA of 9 tons/year in the Benthic TMDL for the Goose Creek watershed. This total WLA was calculated based upon the permitted maximum average concentration for TSS (mg/L) and an assumption of the facility operating at 5 times the design flow. The factor of 5 for the design flow was used as a conservative measure to build in future growth in the watershed. Although the future growth for the watershed was determined by the design flow of each facility currently in the watershed, the future growth is available for both new and expanding permits in the watershed. The actual WLA for this facility without including the future growth is 1.8 tons/year.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

In support for the PCB impairment listed for the Goose Creek Reservoir and for the furthest downstream segment of Goose Creek, this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal facility. Low-level PCB analysis uses EPA Method 1668, which is capable of detecting low-level concentrations for all 209 PCB congeners. DEQ staff has concluded that low-level PCB monitoring is not warranted for this facility, as it is a small wastewater treatment facility (<0.1 MGD) and is not expected to be a source of PCBs. Based upon this information, this facility will not be requested to monitor for low-level PCBs.

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

There are no public water supply intakes located within 5 miles of this discharge.

Goose Creek Ambient Water pH (SU) Data (Sept '74-'May 08)

Winter (Dec-May)			Summer (June-Nov)	
12/9/1974	6.8		9/9/1974	7.3
1/24/1975	7		10/11/1974	9
2/9/1975	6.9		11/24/1974	7
3/5/1975	7		6/18/1975	7.7
4/24/1975	8.5		7/26/1975	7.5
5/20/1975	7.5		8/4/1975	7.1
12/29/1975	7.3		9/25/1975	7
1/7/1976	7.3		10/7/1975	7
2/19/1976	7.4		11/14/1975	7.2
3/2/1976	7		7/30/1976	7.4
4/20/1976	8.6		8/16/1976	7.3
5/5/1976	8		9/16/1976	7.3
12/7/1976	7.3		9/30/1976	7.5
3/21/1977	7.4		11/1/1976	7.3
4/12/1977	7.3		6/23/1977	7.8
5/4/1977	7.7		7/25/1977	7.5
12/5/1977	7.3		8/9/1977	7.4
3/21/1978	7.1		9/22/1977	7.6
4/6/1978	7.3		10/28/1977	7.3
5/15/1978	7.3		11/21/1977	7.2
12/12/1978	7.3		6/27/1978	7.7
1/2/1979	7.1		7/18/1978	7.7
3/15/1979	7		8/21/1978	7.9
5/1/1979	7.8		9/18/1978	8.5
12/10/1979	7.3		10/2/1978	7.4
1/6/1980	7.5		10/31/1978	7.8
2/11/1980	7.2		6/4/1979	7
3/12/1980	7.3		7/9/1979	8.8
4/16/1980	7.5		8/6/1979	7.5
5/19/1980	7.8		8/30/1979	7.5
12/4/1980	8.8		10/30/1979	7
2/2/1981	--		11/27/1979	7.3
3/4/1981	7.4		6/2/1980	8.3
4/1/1981	9.5		7/31/1980	7.5
5/4/1981	7.2		11/13/1980	8.3
12/1/1981	6.9		6/29/1981	8.3
1/4/1982	6.6		7/20/1981	7.4
2/1/1982	6.1		8/3/1981	7
3/2/1982	6.7		9/1/1981	7.3
4/1/1982	7.4		10/1/1981	7.5
5/6/1982	7.2		11/4/1981	7.8
12/14/1982	7		6/14/1982	6.9
2/2/1983	7.5		7/12/1982	7.7
3/8/1983	7.5		9/28/1982	7.2
4/5/1983	7		10/25/1982	7.2
5/4/1983	7		11/9/1982	7.3
12/13/1983	7		6/7/1983	6.8
2/28/1984	7.3		7/6/1983	7.4
3/14/1984	7.2		8/2/1983	7.8
4/10/1984	7.5		9/13/1983	7.3
5/8/1984	7.2		10/12/1983	7.4
1/16/1985	6.5		11/14/1983	7.2
2/14/1985	6.5		6/12/1984	7.9
3/5/1985	7		7/10/1984	7.4
5/14/1985	7.1		8/28/1984	8
12/10/1985	6.5		9/5/1984	7.8

Attachment 4

Goose Creek Ambient Water pH (SU) Data (Sept '74-May 08)

Winter (Dec-May)			Summer (June-Nov)	
1/7/1986	6.5		10/2/1984	--
2/1/1986	6.5		6/11/1985	7.5
3/4/1986	6.9		7/9/1985	6.9
4/2/1986	8.3		8/7/1985	7.7
5/13/1986	7.8		9/24/1985	6.4
4/7/1987	7.3		10/22/1985	6.7
5/5/1987	7.2		11/20/1985	6.9
12/21/1987	7.9		6/17/1986	7.1
1/28/1988	--		7/15/1986	6.4
3/8/1988	7.7		9/9/1986	7.4
4/26/1988	8.5		10/28/1986	7.1
5/24/1988	6.9		6/2/1987	7.9
1/11/1989	7.6		7/23/1987	7.81
2/8/1989	7.9		8/11/1987	7.7
3/9/1989	7.6		9/23/1987	7.3
4/11/1989	7.7		10/13/1987	7.9
5/9/1989	7.5		11/23/1987	7.8
12/7/1989	--		6/21/1988	7.46
1/4/1990	--		7/13/1988	--
2/8/1990	--		8/10/1988	8.2
3/13/1990	--		9/15/1988	7.8
4/11/1990	--		10/13/1988	7.4
5/7/1990	--		11/15/1988	7.2
12/11/1990	7.4		6/7/1989	--
1/22/1991	7.9		7/26/1989	--
2/12/1991	--		8/9/1989	7.7
3/6/1991	--		9/14/1989	7.6
4/3/1991	6.8		10/5/1989	7.9
5/1/1991	7.4		11/7/1989	7.6
12/11/1991	7		6/4/1990	--
1/2/1992	6.7		7/2/1990	7.4
2/3/1992	7.2		8/7/1990	7.4
3/4/1992	7		9/11/1990	7.6
4/7/1992	7.6		10/16/1990	--
5/6/1992	7.8		11/14/1990	7.4
12/2/1992	7.2		6/12/1991	7.1
1/12/1993	6.5		7/2/1991	7.5
2/3/1993	7.2		7/31/1991	--
3/3/1993	6.8		8/28/1991	7.5
4/7/1993	7		10/30/1991	6.7
5/6/1993	6.7		11/26/1991	6.8
1/26/1994	7.2		6/3/1992	7.6
2/2/1994	7.2		7/15/1992	7.2
3/22/1994	7		8/5/1992	6.9
4/13/1994	6.8		8/6/1992	--
5/18/1994	7		9/2/1992	7.4
12/7/1994	7.5		10/21/1992	7.5
1/4/1995	8.1		11/18/1992	7.5
2/1/1995	7.8		6/9/1993	6.5
3/1/1995	7.7		7/7/1993	7.2
4/4/1995	7.3		8/4/1993	6.8
5/3/1995	7.5		9/22/1993	7.6
12/7/1995	7.7		10/6/1993	7.2
2/8/1996	7.1		10/22/1993	--
3/7/1996	7.1		11/9/1993	7.6
4/3/1996	7.1		6/8/1994	7.4

Goose Creek Ambient Water pH (SU) Data (Sept '74-'May 08)

Winter (Dec-May)			Summer (June-Nov)	
5/8/1996	7.4		7/6/1994	7.3
12/3/1996	7.2		9/7/1994	7.8
1/7/1997	7.4		10/18/1994	7.5
2/4/1997	7.3		11/9/1994	7.9
3/27/1997	7.9		7/6/1995	--
4/8/1997	7.8		7/12/1995	7.6
5/6/1997	7.5		8/2/1995	7.9
12/2/1997	7.5		9/13/1995	7.5
1/14/1998	7.3		10/4/1995	7.2
2/3/1998	--		6/5/1996	7.3
3/3/1998	6.9		8/21/1996	6.5
4/1/1998	7.5		9/12/1996	6.8
12/15/1998	7.5		11/13/1996	7.2
1/5/1999	7.3		6/5/1997	7.2
2/2/1999	7.4		7/8/1997	7.2
3/9/1999	7.9		8/6/1997	7.4
4/6/1999	7		9/3/1997	7.5
5/5/1999	7.7		10/7/1997	7.5
12/29/1999	6.3		11/13/1997	7.3
3/1/2000	--		6/9/1998	7.7
4/4/2000	--		7/23/1998	6.2
5/2/2000	--		8/12/1998	7.1
12/11/2000	--		10/20/1998	7.1
1/23/2001	--		11/18/1998	7.2
2/6/2001	--		6/15/1999	7.8
3/29/2001	7.23		7/15/1999	7.2
4/3/2001	7.07		8/10/1999	7.1
5/1/2001	7.48		9/7/1999	--
12/12/2001	7.09		9/8/1999	--
1/24/2002	7.11		10/25/1999	7.6
2/7/2002	6.9		11/29/1999	7.4
3/21/2002	7.12		6/5/2000	7.5
4/10/2002	7.57		7/10/2000	7.24
5/9/2002	7.31		8/1/2000	7.41
1/29/2007	7.5		9/7/2000	7.37
3/13/2007	7.5		10/10/2000	7.63
5/14/2007	7.6		11/1/2000	--
1/28/2008	8.4		6/6/2001	7.42
3/26/2008	8.8		9/25/2001	6.97
5/8/2008	7.5		10/11/2001	7.15
			11/15/2001	7.24
			6/5/2002	7.28
			7/2/2002	7.03
			7/31/2007	7.6
			9/5/2007	7.3
			11/6/2007	7.5

90th Percentile = 7.9 **90th Percentile = 7.864**

Goose Creek Ambient Water Temperature (°C) Data (Sept '74-'May 08)

Summer (June - Nov)		Winer (Dec - May)	
9/9/1974	20.56	12/9/1974	6.11
10/11/1974	13.89	1/24/1975	1.67
11/24/1974	8.89	2/9/1975	1.67
6/18/1975	25	3/5/1975	2.78
7/26/1975	23.33	4/24/1975	15
8/4/1975	25.56	5/20/1975	21.11
9/25/1975	21.11	12/29/1975	3.89
10/7/1975	15	1/7/1976	1.67
11/14/1975	7.78	2/19/1976	10
7/30/1976	24.44	3/2/1976	10
8/16/1976	22.22	4/20/1976	22.78
9/16/1976	18.89	5/5/1976	13.89
9/30/1976	13.89	12/7/1976	1.11
11/1/1976	9.44	3/21/1977	8.1
6/23/1977	23	4/12/1977	17
7/25/1977	24	5/4/1977	17.5
8/9/1977	25	12/5/1977	0.6
9/22/1977	2	3/21/1978	9
10/28/1977	15.5	4/6/1978	11
11/21/1977	0.9	5/15/1978	14
6/27/1978	25	12/12/1978	2
7/18/1978	23	1/2/1979	7.5
8/21/1978	22	3/15/1979	8
9/18/1978	24	5/1/1979	16
10/2/1978	16	12/10/1979	0.7
10/31/1978	10	1/6/1980	0.6
6/4/1979	17.5	2/11/1980	1
7/9/1979	22	3/12/1980	6
8/6/1979	27	4/16/1980	10
8/30/1979	23.5	5/19/1980	19.2
10/30/1979	14	12/4/1980	7.2
11/27/1979	12	2/2/1981	--
6/2/1980	22.5	3/4/1981	4.3
7/31/1980	25	4/1/1981	13.7
11/13/1980	6.6	5/4/1981	15.5
6/29/1981	24.3	12/1/1981	0.3
7/20/1981	26	1/4/1982	2.8
8/3/1981	23.9	5/6/1982	19.5
9/1/1981	24	12/14/1982	1.5
10/1/1981	16	2/2/1983	5
11/4/1981	12.4	3/8/1983	8.4
6/14/1982	14.5	4/5/1983	10.5
7/12/1982	24.6	5/4/1983	16.5
9/28/1982	16.5	12/13/1983	8
10/25/1982	5.49	2/28/1984	4
11/9/1982	7	3/14/1984	3.5
6/7/1983	19.2	4/10/1984	10
7/6/1983	22	5/8/1984	15.5
8/2/1983	25.5	1/16/1985	0
9/13/1983	23	2/14/1985	2
10/12/1983	16	3/5/1985	9
11/14/1983	4.3	5/14/1985	24
6/12/1984	27	12/10/1985	3.5
7/10/1984	23	1/7/1986	0
8/28/1984	24	2/1/1986	1

Goose Creek Ambient Water Temperature (°C) Data (Sept '74-'May 08)

Summer (June - Nov)		Winer (Dec - May)	
9/5/1984	20.2	3/4/1986	4.3
10/2/1984	--	4/2/1986	15
6/11/1985	22.5	5/13/1986	17.5
7/9/1985	23.5	10/28/1986	12
8/7/1985	23	4/7/1987	5.2
9/24/1985	18.5	5/5/1987	9
10/22/1985	11.5	12/21/1987	5.5
11/20/1985	13	1/28/1988	--
6/17/1986	24	3/8/1988	8.1
7/15/1986	23	4/26/1988	14.5
9/9/1986	18	5/24/1988	17.8
6/2/1987	22.6	11/15/1988	6.6
7/23/1987	29	1/11/1989	3.1
8/11/1987	24.4	2/8/1989	1.5
9/23/1987	18.3	3/9/1989	1.6
10/13/1987	9.3	4/11/1989	8.9
11/23/1987	1.8	5/9/1989	12.6
6/21/1988	22.1	11/7/1989	8.7
7/13/1988	21.4	12/7/1989	1.7
8/10/1988	22.5	1/4/1990	0
9/15/1988	18.7	2/8/1990	4
10/13/1988	9.4	3/13/1990	--
6/7/1989	20.2	4/11/1990	9.3
7/26/1989	--	5/7/1990	11.4
8/9/1989	19.8	12/11/1990	4.6
9/14/1989	23	1/22/1991	2.8
10/5/1989	13.7	2/12/1991	--
6/4/1990	15.6	3/6/1991	2.7
7/2/1990	23.1	4/3/1991	10.3
8/7/1990	21.9	5/1/1991	18.9
9/11/1990	20.7	12/11/1991	5.1
10/16/1990	--	1/2/1992	2.8
11/14/1990	5.9	2/3/1992	1.4
6/12/1991	24.1	3/4/1992	7.4
7/2/1991	24.2	4/7/1992	11.7
7/31/1991	--	5/6/1992	13.8
8/28/1991	24.8	12/2/1992	5.4
10/30/1991	11.6	1/12/1993	4.7
11/26/1991	4.6	2/3/1993	1.4
6/3/1992	19	3/3/1993	7.3
7/15/1992	26.6	4/7/1993	9.9
8/5/1992	21.6	5/6/1993	18.7
8/6/1992	--	1/26/1994	1.1
9/2/1992	21	2/2/1994	1
10/21/1992	9.6	3/22/1994	8.1
11/18/1992	7.6	4/13/1994	13.5
6/9/1993	22.8	5/18/1994	14.1
7/7/1993	27.1	12/7/1994	9.9
8/4/1993	25.4	1/4/1995	0.6
9/22/1993	17.6	2/1/1995	2.1
10/6/1993	12.5	3/1/1995	6.4
10/22/1993	--	4/4/1995	11.9
11/9/1993	5.6	5/3/1995	13.6
6/8/1994	24.1	12/7/1995	4
7/6/1994	27.3	2/8/1996	1.1

Goose Creek Ambient Water Temperature (°C) Data (Sept '74-'May 08)

Summer (June - Nov)		Winer (Dec - May)	
9/7/1994	18.5	3/7/1996	7.5
10/18/1994	10.7	4/3/1996	9
11/9/1994	12.3	5/8/1996	12.5
7/6/1995	--	12/3/1996	5.6
7/12/1995	23.4	1/7/1997	5.9
8/2/1995	26.3	2/4/1997	4.9
9/13/1995	20.2	3/27/1997	12.1
10/4/1995	18.4	4/8/1997	13.3
6/5/1996	18.3	5/6/1997	16.1
8/21/1996	21.6	12/2/1997	5.4
9/12/1996	19.9	1/14/1998	4.5
11/13/1996	4.6	2/3/1998	--
6/5/1997	15.8	3/3/1998	7.6
7/8/1997	23.3	4/1/1998	17.3
8/6/1997	20.7	12/15/1998	2.9
9/3/1997	22.7	1/5/1999	0.1
10/7/1997	18	1/5/1999	0.1
11/13/1997	6.5	2/2/1999	3
6/9/1998	17.1	3/9/1999	0.1
7/23/1998	27	4/6/1999	11.7
8/12/1998	23.7	5/5/1999	19.5
10/20/1998	14.4	12/29/1999	1.3
11/18/1998	8.3	3/1/2000	10.6
6/15/1999	23.8	4/4/2000	15
7/15/1999	22.6	5/2/2000	16
8/10/1999	22.2	12/11/2000	--
9/7/1999	--	1/23/2001	--
9/8/1999	--	2/6/2001	--
10/25/1999	10.4	3/29/2001	6.02
11/29/1999	7.6	4/3/2001	8.57
6/5/2000	18.5	5/1/2001	16.15
7/10/2000	24.88	12/12/2001	7.04
8/1/2000	24.39	1/24/2002	3.78
9/7/2000	19.05	2/7/2002	1.92
10/10/2000	10.99	3/21/2002	8.37
11/1/2000	--	4/10/2002	13.76
6/6/2001	19.9	5/9/2002	17.37
9/25/2001	17.35	1/29/2007	0.4
10/11/2001	13.16	3/13/2007	8.8
11/15/2001	10.95	5/14/2007	17.7
6/5/2002	24.78	1/28/2008	0.6
7/2/2002	25.28	3/26/2008	8.7
7/31/2007	26.2	5/8/2008	18.8
9/5/2007	22.4		
11/6/2007	9.7		

90th Percentile= 25 **90th Percentile = 17.18**

Foxcroft School DMR pH data

Winter (Dec- May)			Summer (June -Nov)		
4/30/09		6.9	10/31/09		7.1
3/31/09		7.1	9/30/09		7.1
2/28/09		7.2	8/31/09		7.2
1/31/09		7.2	7/31/09		7.1
12/31/08		7.2	6/30/09		7.2
5/31/08		7.1	5/31/09		7.1
4/30/08		6.9	11/30/08		7.2
3/31/08		7	10/31/08		7.1
2/29/08		7.2	9/30/08		6.8
1/31/08		7.2	8/31/08		7.2
12/31/07		7.3	7/31/08		7.2
5/31/07		6.9	6/30/08		7.2
4/30/07		7	11/30/07		7.2
3/31/07		7.1	10/31/07		7.9
2/28/07		7.2	9/30/07		7.2
1/31/07		7.2	8/31/07		7.2
12/31/06		7.3	7/31/07		7.4
5/31/06		7.1	6/30/07		7.3
4/30/06		7	11/30/06		7.3
3/31/06		7.1	10/31/06		6.9
2/28/06		7.4	9/30/06		6.9
1/31/06		7.5	8/31/06		7.2
12/31/05		7.2	7/31/06		7.2
5/31/05		6.9	6/30/06		7.1
4/30/05		7	11/30/05		7.5
3/31/05		6.9	10/31/05		7.6
2/28/05		7.2	9/30/05		7.3
1/31/05		7.7	8/31/05		7.1
12/31/04		6.9	7/31/05		7.1
5/31/04		6.6	6/30/05		7
4/30/04		7	11/30/04		7.1
3/31/04		7.1	10/31/04		6.8
2/29/04		7	9/30/04		7.5
1/31/04		7	8/31/04		6.9
12/31/03		7.2	7/31/04		6.9
			6/30/04		7
			11/30/03		7.1

90th Percentile = 7.3 **90th Percentile = 7.44**

Goose Creek Total Hardness Data July 1987 - July 2002

Date	Value
7/23/1987	54
8/11/1987	55
9/23/1987	50
10/13/1987	52
11/23/1987	50
12/21/1987	44
3/8/1988	42
4/26/1988	40
5/24/1988	37
6/21/1988	42
7/13/1988	38
8/10/1988	40
9/15/1988	60
10/13/1988	56
11/15/1988	58
1/11/1989	56
2/8/1989	52
3/9/1989	48
4/11/1989	46
5/9/1989	40
6/7/1989	48
7/26/1989	48
8/9/1989	50
9/14/1989	50
10/5/1989	52
11/7/1989	56
12/7/1989	48
1/4/1990	48
2/8/1990	47
4/11/1990	44
5/7/1990	46
6/4/1990	48
7/2/1990	48
8/7/1990	46
9/11/1990	58
10/16/1990	52
11/14/1990	52
12/11/1990	50
1/22/1991	40
2/12/1991	44
3/6/1991	40
4/3/1991	40
5/1/1991	42
6/12/1991	50
7/2/1991	53
8/28/1991	42
10/30/1991	82
11/26/1991	60
12/11/1991	44
1/2/1992	56
2/3/1992	48
2/5/1992	52
3/4/1992	50

Date	Value
4/7/1992	42
5/6/1992	50
6/3/1992	48
7/15/1992	50
8/5/1992	54
9/2/1992	52
10/21/1992	54
11/18/1992	50
12/2/1992	45
1/12/1993	46
3/3/1993	42
4/7/1993	36
5/6/1993	42
6/9/1993	40
7/7/1993	46
8/4/1993	54
9/22/1993	62
9/22/1993	62
10/6/1993	58
10/22/1993	62
11/9/1993	68
1/26/1994	40
2/2/1994	38
3/22/1994	46
4/13/1994	40
5/18/1994	43
6/8/1994	48
7/6/1994	52
9/7/1994	53
10/18/1994	55
11/9/1994	54
12/7/1994	48
1/4/1995	50
2/1/1995	46
3/1/1995	44
4/4/1995	42
5/3/1995	46
7/12/1995	45
8/2/1995	68
9/13/1995	56
10/4/1995	54
12/7/1995	47
2/8/1996	40
3/7/1996	40
4/3/1996	46
5/8/1996	42
6/5/1996	50
8/21/1996	48
9/12/1996	44
11/13/1996	47
12/3/1996	38
1/7/1997	43
2/4/1997	41.3

Date	Value
3/27/1997	41.4
5/6/1997	46.9
6/5/1997	52
7/8/1997	50.8
8/6/1997	42.9
9/3/1997	53
10/7/1997	56.3
11/13/1997	37.9
2/3/1998	39.5
3/3/1998	38
4/1/1998	36.4
11/18/1998	61
12/15/1998	67
2/2/1999	56
3/9/1999	56
4/6/1999	44
5/5/1999	50
6/15/1999	50.4
7/15/1999	47.2
8/10/1999	49.2
9/8/1999	35.2
11/29/1999	42.3
12/29/1999	46.4
3/1/2000	47
4/4/2000	14
5/2/2000	23
6/5/2000	63
7/10/2000	61
8/1/2000	46.1
9/7/2000	49.2
10/10/2000	53.1
11/1/2000	55.3
12/11/2000	46.4
1/23/2001	51.4
2/6/2001	49.3
3/29/2001	27.3
4/3/2001	26
5/1/2001	26.4
6/6/2001	45.8
9/25/2001	20.1
10/11/2001	51.2
11/15/2001	33.8
12/12/2001	49
1/24/2002	50.6
2/7/2002	45.8
3/21/2002	57.2
4/10/2002	56
5/9/2002	51.7
6/5/2002	59.3
7/2/2002	54.4

Attachment 5

Average Total Hardness = 48 mg/L

High Flow - Dec - May

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Foxcroft School WWTP Permit No.: VA0024112

Receiving Stream: Goose Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	48 mg/L
90% Temperature (Annual) =	25 deg C
90% Temperature (Wet season) =	17.18 deg C
90% Maximum pH =	7.9 SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	4.46 MGD
30Q10 (Wet season)	8.8 MGD
30Q5 =	0.48 MGD
Harmonic Mean =	MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	25 deg C
90% Temp (Wet season) =	15 deg C
90% Maximum pH =	7.3 SU
10% Maximum pH =	SU
Discharge Flow =	0.075 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	9.9E+02	--	--	na	7.3E+03	--	--	--	--	--	--	--	--	--	--	na	**7.3E+03**
Acrolein	0	--	--	na	9.3E+00	--	--	na	6.9E+01	--	--	--	--	--	--	--	--	--	--	na	**6.9E+01**
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	**2.5E+00**
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	**3.0E+00**	--	na	**5.0E-04**
Ammonia-N (mg/l) (Yearly)	0	2.62E+01	2.58E+00	na	--	2.62E+01	2.58E+00	na	--	--	--	--	--	--	--	--	--	**2.62E+01**	**2.58E+00**	na	--
Ammonia-N (mg/l) (High Flow)	0	1.05E+01	2.39E+00	na	--	6.37E+02	2.83E+02	na	--	--	--	--	--	--	--	--	--	**6.37E+02**	**2.83E+02**	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	3.0E+05	--	--	--	--	--	--	--	--	--	--	na	**3.0E+05**
Antimony	0	--	--	na	6.4E+02	--	--	na	4.7E+03	--	--	--	--	--	--	--	--	--	--	na	**4.7E+03**
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	**3.4E+02**	**1.5E+02**	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	**5.1E+02**
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	**2.0E-03**
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	**5.3E+00**
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	4.8E+05	--	--	--	--	--	--	--	--	--	--	na	**4.8E+05**
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	**2.2E+01**
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	**1.4E+03**
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	**1.4E+04**
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	**1.8E+00**	**6.6E-01**	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	**1.6E+01**
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	**2.4E+00**	**4.3E-03**	na	**8.1E-03**
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	**8.6E+05**	**2.3E+05**	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.9E+01**	**1.1E+01**	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	**1.2E+04**

Attachment 6

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	8.1E+04	--	--	--	--	--	--	--	--	--	--	na	8.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.2E+05
DDD [C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE [C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	5.3E+04	--	--	--	--	--	--	--	--	--	--	na	5.3E+04
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	7.4E+04	--	--	--	--	--	--	--	--	--	--	na	7.4E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	3.3E+05	--	--	--	--	--	--	--	--	--	--	na	3.3E+05
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	6.3E+03	--	--	--	--	--	--	--	--	--	--	na	6.3E+03
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	8.1E+06	--	--	--	--	--	--	--	--	--	--	na	8.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	3.3E+04	--	--	--	--	--	--	--	--	--	--	na	3.3E+04
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	3.9E+04	--	--	--	--	--	--	--	--	--	--	na	3.9E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	3.8E-07	--	--	--	--	--	--	--	--	--	--	na	3.8E-07
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	6.6E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	6.6E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	6.6E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	6.6E+02
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	6.6E+02	--	--	--	--	--	--	--	--	--	--	na	6.6E+02
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	4.4E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	4.4E-01
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	2.2E+00	--	--	--	--	--	--	--	--	--	--	na	2.2E+00

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.0E+03	--	--	--	--	--	--	--	--	--	--	na	1.0E+03
Fluorene	0	--	--	na	5.3E+03	--	--	na	3.9E+04	--	--	--	--	--	--	--	--	--	--	na	3.9E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene[C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene[C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	8.1E+03	--	--	--	--	--	--	--	--	--	--	na	8.1E+03
Hexachloroethane[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	3.4E+04	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	3.4E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	5.1E+03	--	--	--	--	--	--	--	--	--	--	na	5.1E+03
N-Nitrosodimethylamine[C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine[C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine[C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	6.4E+06	--	--	--	--	--	--	--	--	--	--	na	6.4E+06
Pyrene	0	--	--	na	4.0E+03	--	--	na	3.0E+04	--	--	--	--	--	--	--	--	--	--	na	3.0E+04
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	3.1E+04	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**3.1E+04**
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+01**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.3E+01**
Thallium	0	--	--	na	4.7E-01	--	--	na	3.5E+00	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.5E+00**
Toluene	0	--	--	na	6.0E+03	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.4E+04**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**2.8E-03**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	5.2E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**5.2E+02**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+02**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.0E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	1.9E+05	--	--	--	--	--	--	--	--	**6.5E+01**	**6.6E+01**	**na**	**1.9E+05**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	4.7E+03
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Low flow - June - Nov

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Foxcroft School WWTP Permit No.: VA0024112

Receiving Stream: Goose Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season)	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	25 deg C
90% Temp (Wet season) =	15 deg C
90% Maximum pH =	7.4 SU
10% Maximum pH =	SU
Discharge Flow =	0.075 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Acenapthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	**9.9E+02**
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	**9.3E+00**
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	**2.5E+00**
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	**3.0E+00**	--	na	**5.0E-04**
Ammonia-N (mg/l) (Yearly)	0	2.30E+01	2.41E+00	na	--	2.30E+01	2.41E+00	na	--	--	--	--	--	--	--	--	--	**2.30E+01**	**2.41E+00**	na	--
Ammonia-N (mg/l) (High Flow)	0	2.30E+01	4.59E+00	na	--	2.30E+01	4.59E+00	na	--	--	--	--	--	--	--	--	--	**2.30E+01**	**4.59E+00**	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	**4.0E+04**
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	**6.4E+02**
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	**3.4E+02**	**1.5E+02**	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	**5.1E+02**
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	**2.0E-03**
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	**1.8E-01**
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	**5.3E+00**
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	**6.5E+04**
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	**2.2E+01**
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	**1.4E+03**
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	**1.9E+03**
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	**1.8E+00**	**6.6E-01**	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	**1.6E+01**
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	**2.4E+00**	**4.3E-03**	na	**8.1E-03**
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	**8.6E+05**	**2.3E+05**	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	**1.9E+01**	**1.1E+01**	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	**1.6E+03**

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD [C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE [C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene[C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene[C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine[C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine[C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine[C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Selenium, Tot , Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**4.2E+03**
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+01**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.3E+01**
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.7E-01**
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.0E+03**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**2.8E-03**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.0E+01**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+02**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.0E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	2.6E+04	--	--	--	--	--	--	--	--	**6.5E+01**	**6.6E+01**	**na**	**2.6E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Mixing Zone Predictions for Foxcroft School (High Flow)

Effluent Flow = 0.075 MGD
Stream 7Q10 = 5.32 MGD
Stream 30Q10 = 8.8 MGD
Stream 1Q10 = 4.46 MGD
Stream slope = 0.0012 ft/ft
Stream width = 25 ft
Bottom scale = 3
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .837 ft
Length = 662.9 ft
Velocity = .3991 ft/sec
Residence Time = .0192 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 1.1384 ft
Length = 505.42 ft
Velocity = .4827 ft/sec
Residence Time = .0121 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .7523 ft
Length = 727.64 ft
Velocity = .3733 ft/sec
Residence Time = .5415 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

4/7/2015 12:02:01 PM

Facility = Foxcroft School
Chemical = Ammonia (Jun -- Nov)
Chronic averaging period = 30
WLAa = 23
WLAc = 2.4
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.84240822419915
Average Weekly limit = 4.84240822419915
Average Monthly LImit = 3.31087905862795

The data are:

9

Attachment 7

4/7/2015 12:03:51 PM

Facility = Foxcroft School
Chemical = Ammonia (Dec -- May)
Chronic averaging period = 30
WLAa = 637
WLAc = 283
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

Criteria and WLA Calculations for Ammonia based upon freshwater criteria (Nontidal Only)

Date : 12/11/03

Facility : Foxcroft School STP
Permit Number : VA0024112
Comments : Winter (December - May)

pH	=	7.50	S.U.	BPJ
Temperature	=	15.00	C	
Trout Present (Y or N)	=	N		
Early Life Stages Present (Y or N)	=	Y		
1Q10	=	6.850	MGD	
7Q10	=	8.920	MGD	
30Q10	=	0.10	MGD	
Harmonic Mean	=	0.00	MGD	
Design Flow	=	0.08	MGD	
Percentage of 1Q10 by MIX.exe	=	100.00%	NA MGD	
Percentage of 7Q10 by MIX.exe	=	100.00%	NA MGD	
Water Body Tier	=	1	(1=No Antideg, 2= Antideg)	

Acute - Trout Present

Calculated Ammonia Criteria = $(0.275 / 1 + 10^{(7.204-pH)}) + (39 / 1 + 10^{(pH-7.204)})$
Calculated Ammonia Criteria = 13.28

Acute - Trout Absent

Calculated Ammonia Criteria = $(0.411 / 1 + 10^{(7.204-pH)}) + (58.4 / 1 + 10^{(pH-7.204)})$
Calculated Ammonia Criteria = 19.89

Total Acute Ammonia Criteria = 19.89 mg/l as N

Chronic - Early Life Stages Present

Calculated Ammonia Criteria = $((0.0577 / 1 + 10^{(7.688-pH)}) + (2.487 / 1 + 10^{(pH-7.688)})) X$
MIN = 2.85 or 1.45 x 10(0.028(25-temp)), which ever is less

Calculated MIN = 2.76
MIN Comparison = 2.76 Calculated value is less than 2.85

Calculated Ammonia Criteria = 4.23

Chronic - Early Life Stages Absent

Calculated Ammonia Criteria = $((0.0577 / 1 + 10^{(7.688-pH)}) + (2.487 / 1 + 10^{(pH-7.688)})) X ($
MAX = Temp. in C or 7, whichever is greater

MAX Comparison = 15.00 Temperature value enter will be used

Calculated Ammonia Criteria = 4.23

Total Chronic Ammonia Criteria = 4.23 mg/l as N

Parameters	Instream Background	Acute Criteria (mg/l)	Acute Baseline (mg/l)	Acute WLA (mg/l)	Antideg Acute WLA (mg/l)	SSTV = 0.4 X aWLA (mg/l)	Chronic Criteria (mg/l)	Chronic Baseline (mg/l)	Chronic WLA (mg/l)	Antideg Chronic WLA (mg/l)	SSTV = 0.6 X cWLA (mg/l)
Ammonia	ND	19.89	NA	1836.53	NA	734.61	4.23	NA	507.40	NA	304.44

Notes:
1) ND = No Data available, and therefore the background concentrations are assumed to be Zero.
2) Acute Criteria = One-hour average concentration of total ammonia nitrogen in freshwater shall not exceed, more than once every three years on the average.
3) Chronic Criteria = the 30-day average concentration of total ammonia nitrogen where early life stages of fish are present in freshwater shall not exceed, more than once every three years on the ave
4) Acute criteria/WLA based on 1Q10 flow; chronic criteria/WLA based on 7Q10 flow.

Criteria and WLA Calculations for Ammonia based upon freshwater criteria (Nontidal Only)

Date : 12/11/03

Facility : Foxcroft School STP
Permit Number : VA0024112
Comments : Summer (June - November)

pH	=	7.50	S.U.	BPJ
Temperature	=	24.00	C	
Trout Present (Y or N)	=	N		
Early Life Stages Present (Y or N)	=	Y		
1Q10	=	0.000	MGD	
7Q10	=	0.000	MGD	
30Q10	=	0.10	MGD	
Harmonic Mean	=	0.00	MGD	
Design Flow	=	0.08	MGD	
Percentage of 1Q10 by MIX.exe	=	100.00%	NA	MGD
Percentage of 7Q10 by MIX.exe	=	100.00%	NA	MGD
Water Body Tier	=	1	(1=No Antideg, 2= Antideg)	

Acute - Trout Present

Calculated Ammonia Criteria = $(0.275 / 1 + 10^{(7.204-pH)}) + (39 / 1 + 10^{(pH-7.204)})$
Calculated Ammonia Criteria = 13.28

Acute - Trout Absent

Calculated Ammonia Criteria = $(0.411 / 1 + 10^{(7.204-pH)}) + (58.4 / 1 + 10^{(pH-7.204)})$
Calculated Ammonia Criteria = 19.89

Total Acute Ammonia Criteria = 19.89 mg/l as N

Chronic - Early Life Stages Present

Calculated Ammonia Criteria = $((0.0577 / 1 + 10^{(7.688-pH)}) + (2.487 / 1 + 10^{(pH-7.688)})) X$
MIN = 2.85 or 1.45 x 10(0.028(25-temp), which ever is less

Calculated MIN = 1.55
MIN Comparison = 1.55 Calculated value is less than 2.85

Calculated Ammonia Criteria = 2.37

Chronic - Early Life Stages Absent

Calculated Ammonia Criteria = $((0.0577 / 1 + 10^{(7.688-pH)}) + (2.487 / 1 + 10^{(pH-7.688)})) X ($
MAX = Temp. in C or 7, whichever is greater

MAX Comparison = 24.00 Temperature value enter will be used

Calculated Ammonia Criteria = 2.37

Total Chronic Ammonia Criteria = 2.37 mg/l as N

Parameters	Instream Background	Acute Criteria (mg/l)	Acute Baseline (mg/l)	Acute WLA (mg/l)	Antideg Acute WLA (mg/l)	SSTV = 0.4 X aWLA (mg/l)	Chronic Criteria (mg/l)	Chronic Baseline (mg/l)	Chronic WLA (mg/l)	Antideg Chronic WLA (mg/l)	SSTV = 0.6 X cWLA (mg/l)
Ammonia	ND	19.89	NA	19.89	NA	7.96	2.37	NA	2.37	NA	1.42

Notes:
1) ND = No Data available, and therefore the background concentrations are assumed to be Zero.
2) Acute Criteria = One-hour average concentration of total ammonia nitrogen in freshwater shall not exceed, more than once every three years on the average.
3) Chronic Criteria = the 30-day average concentration of total ammonia nitrogen where early life stages of fish are present in freshwater shall not exceed, more than once every three years on the ave
4) Acute criteria/WLA based on 1Q10 flow; chronic criteria/WLA based on 7Q10 flow.

Facility = Foxcroft School STP
Chemical = Ammonia as N (Summer)
Chronic averaging period = 30
WLAa = 19.89
WLAc = 2.37
Q.L. = 0.2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 10
Variance = 36
C.V. = 0.6
97th percentile daily values = 24.3341
97th percentile 4 day average = 16.6379
97th percentile 30 day average= 12.0605
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.78187812139666
Average Weekly limit = 4.78187812139666
Average Monthly Limit = 3.2694930703951

The data are:

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Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

PUBLIC COMMENT PERIOD: May 20, 2015 to June 19, 2015

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Foxcroft School, P. O. Box 555, Middleburg, VA 22117, VA0024112

NAME AND ADDRESS OF FACILITY: Foxcroft School Wastewater Treatment Plant, 22407 Foxhound Road, Middleburg, VA 22117

PROJECT DESCRIPTION: Foxcroft School has applied for a reissuance of a permit for the private Foxcroft School Wastewater Treatment Plant. The applicant proposes to release treated sewage wastewaters from a private school at a rate of 0.075 million gallons per day into a water body. The sludge will be disposed by transporting it to Loudoun County Sanitation Authority for final disposal at the Blue Plains Wastewater Treatment Plant in Washington DC. The facility proposes to release the treated sewage in the Goose Creek in Loudoun County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, BOD_5, Total Suspended Solids, Ammonia as N, *E.coli*, and Dissolved Oxygen and require monitoring for Nitrate-Nitrite, Total Kjeldahl Nitrogen, Total Nitrogen, and Total Phosphorus.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Anna Westernik
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3837 E-mail: anna.westernik@deq.virginia.gov Fax: (703) 583-3821

Attachment 8

Attachment 9

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

Joe Elton
Deputy Director of Operations

Rochelle Altholz
Deputy Director of Administration
and Finance

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804)786-6124

May 7, 2015

Susan Mackert
DEQ – Northern Regional Office
13901 Crown Court
Woodbridge, VA 22193

Re: VA0024112, Foxcroft School WWTP

Dear Ms. Mackert:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Rocky Creek – Goose Creek Stream Conservation Unit (SCU) is located downstream from the project site. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Rocky Creek – Goose Creek SCU has been given a biodiversity ranking of B2, which represents a site of very high significance. The natural heritage resources associated with this site are:

Aquatic Natural Community	G1G2/S1S2/NL/NL
Aquatic Natural Community	G3G4/S3S4/NL/NL

The documented Aquatic Natural Communities are based on Virginia Commonwealth University's INSTAR (*Interactive Stream Assessment Resource*) database which includes over 2,000 aquatic (stream and river) collections statewide for fish and macroinvertebrate. These data represent fish and macroinvertebrate assemblages, instream habitat, and stream health assessments. The associated Aquatic Natural Community is significant on multiple levels. First, these streams are a grade B, per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. These stream reaches also hold a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of this stream to ideal stream conditions of biology and habitat for this region. Lastly, these streams contributes to high Biological Integrity at the watershed level (6th order) based on number of native/non-native, pollution-tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

Threats to the significant Aquatic Natural Communities and the surrounding watershed include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species. To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian buffers with native plant species and maintaining natural stream flow.

To minimize impacts to aquatic resources, DCR supports the use of uv/ozone to replace chlorination disinfection and utilization of new technologies as they become available to improve water quality.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov).

Should you have any questions or concerns, feel free to contact René Hypes at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

René Hypes

S. René Hypes
Project Review Coordinator

Westernik, Anna (DEQ)

From: Aschenbach, Ernie (DGIF)
Sent: Thursday, May 14, 2015 11:05 AM
To: Westernik, Anna (DEQ); nhreview (DCR)
Cc: ProjectReview (DGIF)
Subject: ESSLog 35635; DEQ VPDES re-issuance DEQ# VA-0024112 for the Foxcroft School WWTP in Loudoun County, VA

The effluent characteristics for this permit are not provided with the application for the above-referenced DEQ VPDES re-issuance. The 7Q10 of the receiving water is 0.13 Million Gallons per Day (MGD). The (maximum daily) design flow of the discharge is 0.075 MGD.

According to our records, the receiving reach of the Goose Creek is designated T&E species water for the ST green floater mussel. Provided adherence to the following recommendations & the effluent characteristics and permit conditions, we do not anticipate the reissuance of this permit to result in adverse impact to resources under our purview. We reiterate our ongoing recommendation to use ultraviolet (UV) disinfection (rather than chlorination disinfection), if practicable. If chlorination becomes necessary and is used, we recommend dechlorination, prior to discharge. Freshwater mussels are known to be sensitive to ammonia. The ammonia limits within the 2013 EPA rule are the best information currently available regarding ammonia levels protective of mussels (not T&E mussels, any mussel species). Therefore, we recommend the EPA values being implemented in this permit for this and all future VPDES permits, if practicable. If this is not practicable, we recommend DEQ email the effluent characteristics of the discharge to our ProjectReview email, in order for DGIF to provide more detailed recommendations.

This project is located within 2 miles of a documented occurrence of a state or federal threatened or endangered plant or insect species and/or other Natural Heritage coordination species. Therefore, we recommend coordination with VDCR-DNH regarding the protection of these resources.

Thanks.

Ernie Aschenbach
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We moved! Our new address is:

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